The World's Work

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CONTENTS FOR DECEMBER, 1922

The Late Rev. Lyman Abbott - - - - - - - - - - - - - - - - - - - *Frontispiece*

THE MARCH OF EVENTS—AN EDITORIAL INTERPRETATION - - - - - - - - 115

Benito Mussolini
Bonar Law
R. A. C. Smith
S. W. Stratton
Benjamin M. Anderson, Jr.

SWAPPING LIBERTIES FOR A HIGH YIELD - - - - - - - - - - - - - - 142
Ethical and Practical Considerations

THE JEWS IN AMERICA (*Illustrated*) - - - - - - - - BURTON J. HENDRICK 144
I. How They Came to This Country

SCIENCE REMAKING EVERYDAY LIFE (*Illustrated*) - EDWIN E. SLOSSON 162
II. Cold Almost as Useful as Heat

THE AMERICAN FARMER AND EUROPE (*Illustrated*)
BENJAMIN M. ANDERSON, JR. 176
I. Why Upset Conditions Abroad Cause Distress in the Mississippi Valley

FACTS *VS.* GUESSWORK IN BUSINESS - - - - - - FLOYD W. PARSONS 181
How Industrial Research Is Reducing Costs to the Consumer

FERTILIZING THE FARMS WITH BRAINS (*Illustrated*) - JOHN K. BARNES 187
The Financial and Social Benefits of Modern Farming Methods

THE DRIFT OF THE WORLD'S ART TOWARD AMERICA (*Illustrated*)
FRANK JEWETT MATHER, JR. 198
What Thirty Years Have Done in Bringing the Greatest Paintings Here

THE FIGHT FOR AMERICAN BIRD PROTECTION (*Illustrated*)
T. GILBERT PEARSON 206
Adventures in Enforcing the Law

THE CORN BELT FROM A CAR WINDOW - - - - - - MARK SULLIVAN 215
High Taxes and the Distress of Farmers in the Middle West

SLAVERY AND STEEL—A DAY DREAM? - - - - - - - PHILIP CABOT 222
Is Man the Slave of His Machines?

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TERMS: $4.00 a year; single copies 35 cents

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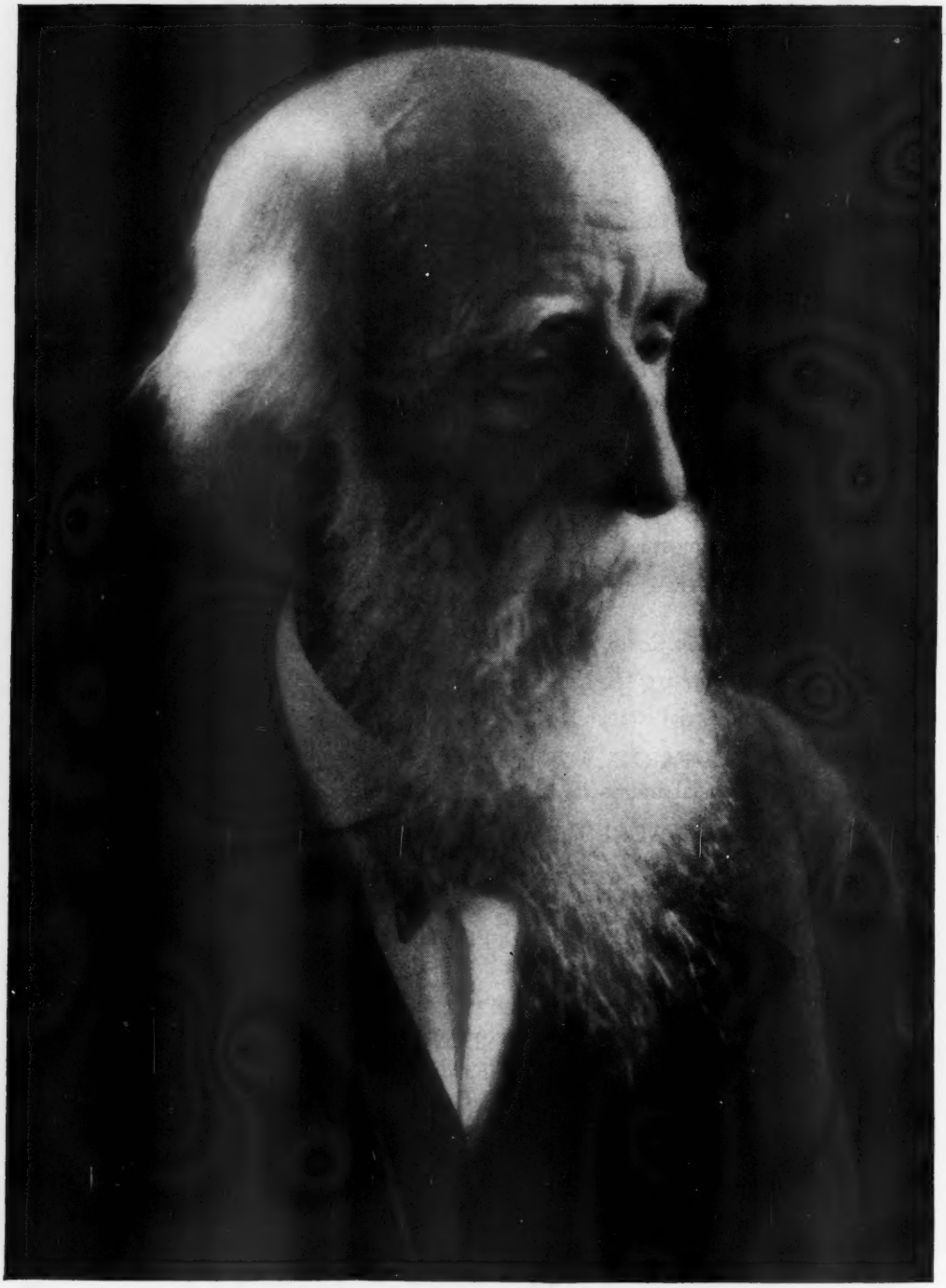
COUNTRY LIFE EDUCATIONAL REVIEW THE GARDEN MAGAZINE RADIO BROADCAST
SHORT STORIES HEALTH BUILDER

CHICAGO: People's Gas Bldg. GARDEN CITY, N. Y. NEW YORK: 120 W. 32nd Street
BOSTON: Tremont Bldg. LOS ANGELES: Van Nuys Bldg.



THE LATE LYMAN ABBOTT

One of the best beloved of American citizens, whose sixty years of distinguished public service as clergyman, editor, and lecturer, was closed by his death on October 22nd, in the 87th year of his age

THE
WORLD'S WORK

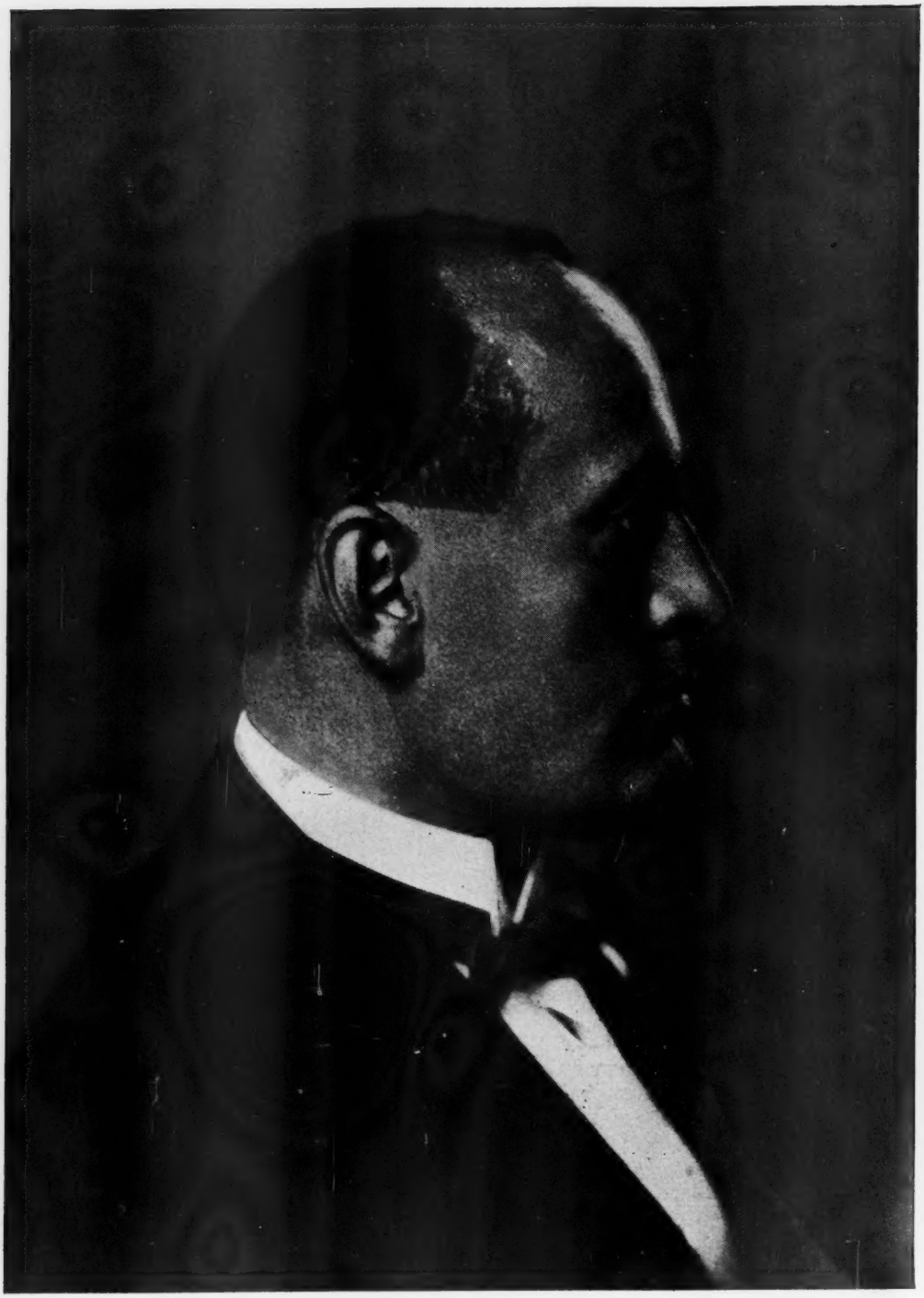
DECEMBER, 1922

VOLUME XLV NUMBER 2

THE MARCH OF EVENTS

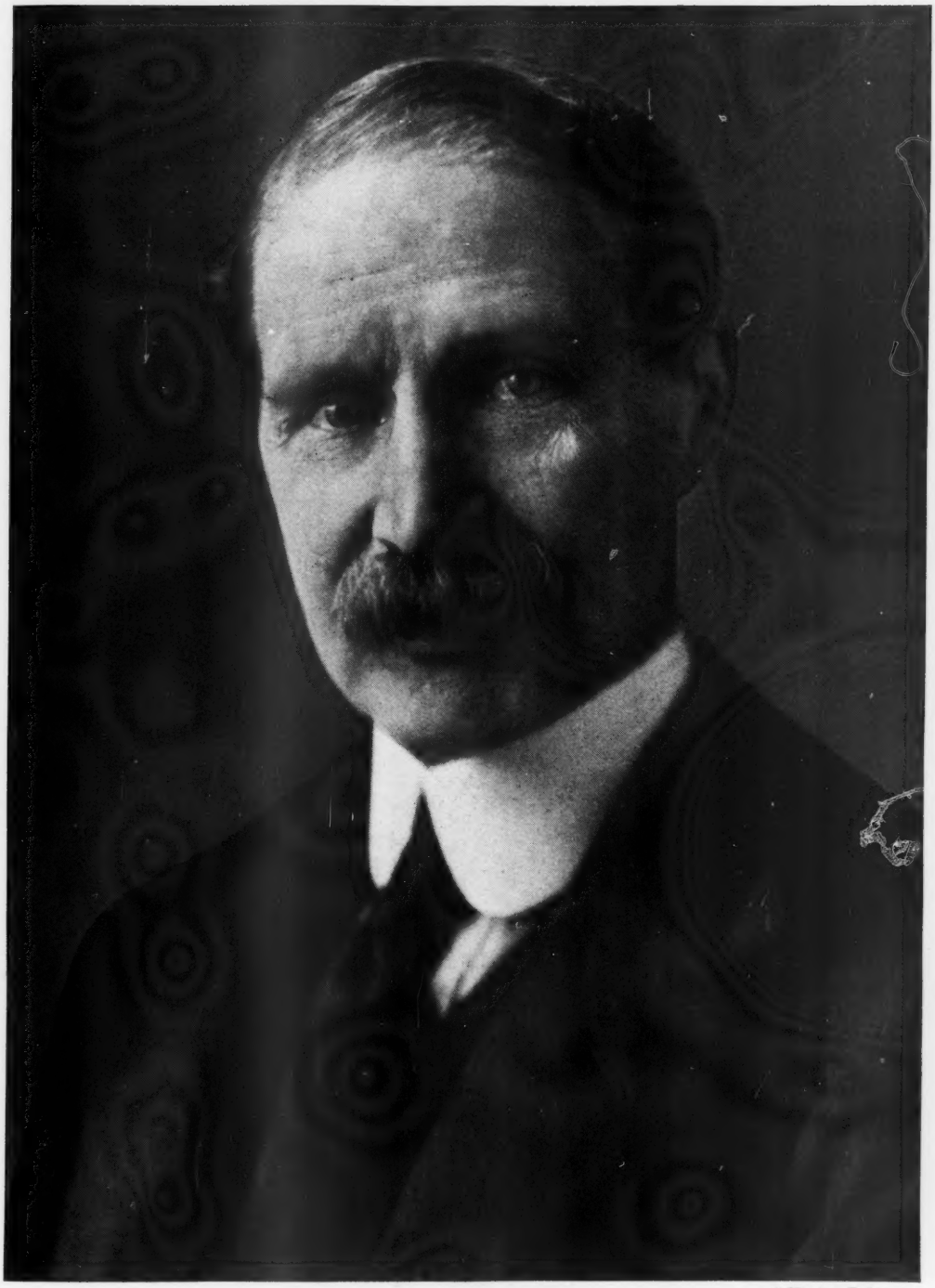
PRESIDENT HARDING has appointed an excellent "Fact" Commission to study the coal situation. It is composed of men who may be regarded as "experts"—to use a much abused word—in all phases of this basic industry. Mr. John Hays Hammond, with his long experience as an engineer, is clearly qualified to probe the technical aspects of coal. Mr. Thomas R. Marshall, the late vice-president, is evidently intended to represent an element of which much has been heard in recent labor discussions, but which has so far not received a great amount of consideration—the long enduring public. Judge Samuel Alschuler, a distinguished jurist of Chicago, will evidently investigate the many legal questions that arise in connection with the supervision of a great national product. Mr. Clark Howell, the editor of the Atlanta *Constitution*, may likewise be accepted as a representative of public opinion, and the qualification of Mr. George Otis Smith is the fact that he is supposed to be our great national authority on coal. Dr. Edward T. Devine is the author of many books dealing with social questions —poverty and its causes, unemployment, the amelioration of working conditions; the appropriateness of his selection on a commission investigating a problem in which the human relation is the all important consideration is at once apparent.

Nature has been bountiful to the United States, and in no respect more conspicuously so than in the vast treasures of coal with which she has underlaid our soil. The known world contains nothing comparable to the rich deposit of anthracite in eastern Pennsylvania, while the stores of bituminous, despite an occasional alarmist cry, are apparently inexhaustible. Indeed, one of the facts brought out by the recent troubles is that we have altogether too much coal, or at least that too much is being mined. That this mighty storehouse of black wealth is not an unmixed blessing the disastrous developments of the last few years have made clear. The whole story of coal has illustrated the best and worst aspects of the American character. It has created mighty industries; in fact this one advantage in itself has made the United States the greatest industrial force that the world has ever known. It has brought to the average man a thousand comforts that have made the life of the workingmen a more luxurious routine than was the daily existence of kings and princes in the middle ages. It has clothed him, fed him, housed him, transported him—in a word it has transformed him from a starved and ignorant dependent into one of the most upstanding of God's creatures. But it has also unloosed selfishnesses and vices and turmoil in all orders of society and in all sections of the land. It is the business of the nation to make use of this inheritance in the way that will best promote happiness and justice among a hundred million people. It is the duty of this commission to discover how this can most successfully be done. The responsibility is a heavy one, and will call into action the ablest powers of the very able men who have been chosen.



BENITO MUSSOLINI

The new Premier of Italy, who has led the patriotic conservative Fascisti party in its struggles to prevent the spread of Bolshevism and to preserve the constitutional régime in Italian institutions of government



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THE RIGHT HON. A. BONAR LAW

Prime Minister of Great Britain and leader of the Conservative Party, whose recent accession to power by the fall of the Lloyd George Ministry is generally regarded as indicating the end of the coalition government and a return to older party alignments of political forces

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R. A. C. SMITH

President of the recently organized Archæological Institute of Yucatan, composed of distinguished American business men and scientists, who plan a systematic study of the remarkable ancient Maya civilization which flourished in eastern Mexico

SAMUEL WESLEY STRATTON

The new president of the Massachusetts Institute of Technology, who brings to his new field of service twenty-two years of experience as Director of the Bureau of Standards at Washington

BENJAMIN M. ANDERSON, JR.
Economist of the Chase National Bank of New York, an outstanding type of the new profession of economic adviser to banks and corporations

European Diplomacy at its Worst

IT MUST be admitted that the most recent developments in Turkey are making somewhat difficult the way of those Americans who believe in close coöperation between their own country and Europe. For in these happenings the European system appears at its worst. The very fact that the technique of the old diplomacy is again rearing its head in this section of the world makes the whole prospect extremely discouraging. In no region is "idealism" so needed as in the reorganization of the Ottoman Empire and in no region is it less apparent at the present time. The story of Turkey since the Armistice of 1918 is once more the story of the worst vices that caused the World War. Fear, jealousy, revenge, and an exaggerated nationalism—these were the emotions that dominated the political thinking of Europe up to 1914, and these are the emotions that stand in the way of European revitalization to-day. And in no one place is their working so apparent as in that great area which once comprised the Ottoman Empire.

There is no particular mystery about the motive that has been shaping events in the Near East. The issue at stake is not the future of the Greeks, the Armenians, or the Turks: the question involved is the future of the City of Constantinople and all that this implies. When the Armistice was signed with Turkey, Allied forces occupied this great outpost; that Great Britain was the "predominant partner" in this occupation has been apparent from the first. Probably only the most rabid haters of Great Britain would attribute to her any especially violent spirit of aggression in this matter. The British Empire has grown not so much as a result of design as of the mere persistence of events. Great Britain obtained Gibraltar not as an act of deliberation, but a more or less haphazard feat of military gallantry in the war of the Spanish Succession. She acquired the Suez Canal simply because the statesman who was piloting her affairs in 1877 had sufficient foresight to purchase a block of shares which were then rather listlessly seeking a buyer. These happy accidents, however, had already given Great Britain possession of two of the three great entrances to the Mediterranean. Not unnaturally the great Mediterranean Powers, France and Italy, feared that the liquidation of the Ottoman Empire would leave England the ruler of the third remaining gateway—Constantinople itself. As far as actual and immediate sovereignty was concerned, this was an improbable development. British statesmen know enough to understand that the seizure of Byzantium would precipitate a European war. But the great facts of the modern world work insistently for the increase of British power. In all that makes for world statesmanship—wealth, commerce, the ability to develop and govern outlying peoples and to establish new frontiers of progress—both France and Italy are children compared with Great Britain. And sea power, now that Russia is eliminated as a contender for Constantinople, would, in the event of a display of force, determine the issue; and sea power, despite the Washington Conference, still remains the greatest British asset.

This, then, is the fear that explains the behavior of France and Italy. The last four years have witnessed no serious attempt to solve the so-called Turkish problem; what they have witnessed is an attempt to forestall Great Britain from gaining anything that might develop into a permanent foothold on the Golden Horn. That has been the jealousy which has directed every important move. It delayed the negotiations for the settlement with Turkey until two years after the signing of the Armistice and this so-called settlement, the Treaty of Sèvres, proved as fragile as other celebrated products of that city; again the reason was the fear of British aggrandizement. The French and Italians did not oppose the large cessions to Greece because they were hostile to the Greeks, but because they looked upon the Greeks merely as the temporary instruments of Great Britain. The province of Thrace has figured conspicuously in these events; the reason is that Thrace, in a military sense, controls Constantinople. Thus the suspicious Latins believed that Britain's desire to give this territory to Greece merely cloaked the determination ultimately to dominate it herself, and therefore practically to rule at the Bosphorus. The purpose of sending the Turks back is to interfere with this plan. The Greek occupation of Smyrna was similarly interpreted as a British move in the same direction, for Smyrna is important not only in itself, but is an almost indispensable consideration in the control of the Turk-

HUMAN PACKHORSES IN CONSTANTINOPLE
These "hamals" represent the type of working classes who have recently been subjected to the great American question mark

ish capital. Therefore Great Britain's allies have facilitated any movement that would displace the Greeks from this city and assist the Turks in returning to it. The mere fact that, in order to accomplish this great end, it was necessary to ally themselves with the most degenerate race in Europe, to assume an attitude toward their allies that was nothing less than left-handed warfare, and to block once more the solution of the problem that has plunged Europe periodically into bloodshed for more than a hundred years, apparently was no deterrent.

The Need of Preventive Statesmanship

IN THESE occurrences, therefore, Europe appears at her worst; and nothing more startlingly brings into relief the essential difference between Europe and America. Without indulging in any unwarranted self-congratulation, it is at least permissible to point out that the motives which have directed recent events in the Near East are not the motives that have directed American history. With the kind of thing that has been going on there, the United States will have nothing to do. These rearrangements of forces and influences in the Ottoman Empire are merely temporary expedients; their purpose is not to promote the welfare of the Ottoman peoples and to accomplish something in the way of solving the ugliest problem of Europe; their purpose is to readjust European jealousies and to prevent one power from obtaining what seems to be a slight advantage over another. It would be strange if the charitable spirit with which the American people respond to the constant appeal for help in rescuing from starvation the subjects of the Turk were not clouded with a slight feeling of impatience. To suggest that these solicitations are misdirected would be the extreme of brutality; yet there seems something absurd in the fact that Americans should be constantly called upon to feed and clothe the millions that suffer continuously from Ottoman rule. Relief is rushed for one massacre and deportation only to be followed by another effort of the same kind. This statement is not made for the purpose of discouraging these fine efforts; but merely to point out that America is really handling the problem in the wrong way.

Perhaps the greatest shortcoming of modern statesmanship is the fact that it pays so little heed to the teachings of modern science. In its manifestations it is centuries behind the work of the up-to-date laboratory. Americans and other philanthropic peoples are tackling the Turkish problem in much the same way that the old-fashioned medicine attacked disease. It is doctoring the symptoms and the consequences instead of going at the root of the difficulty. The great triumph of modern medical art is preventive medicine. The scientific method is to find the cause, destroy it, and so prevent the plague from getting a foothold. Its purpose is only secondarily to cure, its primary aim is prevention. The result is that many of the diseases that once took their annual toll of millions are practically blotted out. The greatest need of the world at the present moment is similarly preventive statesmanship. The business of the rulers of nations should be to go to the cause of the ills that now assail the world, and remove these. As far as the Ottoman Empire

is concerned the diagnosis at least is not a difficult matter. The rulers of that country are a tribe of Asiatic barbarians who for nearly five centuries have maintained an armed camp in what was once one of the most prosperous and civilized parts of the world. The word "barbarian" is used advisedly, for the Turk has none of the qualities that make up what is known as European civilization. He has no art, no literature, nothing that, in the modern sense, resembles a science of government or of orderly living: in the five hundred years that he has pitched his tent by the Bosphorus he has erected no great buildings—even his own Mohammedan mosques are practically all former Christian churches. At one time, before warfare so extensively involved machinery, he was an able warrior; he is a brave and tenacious individual fighter to-day, but, unassisted by enlightened peoples, he cannot even make war, for the mechanics and chemistry of war are entirely beyond his grasp. Modern conceptions of citizenship and democracy are things he will never understand; he knows only conquered and subject peoples, whom it is his privilege to treat as slaves. Fate has given him domination over large numbers of Christian populations which his religion teaches him to look upon as lower than cattle, and his treatment of them has always accorded with this conception. An unfortunate phase of the problem is that these subject peoples themselves are not without their serious shortcomings. For centuries they have had no opportunity to develop the qualities that they possess; such things as popular education and a fair chance at life have not been their experience. Perhaps, as it is now commonly said, they may represent inferior breeds of mankind; what is certain is that no people circumstanced as they have been for five hundred years, could exhibit themselves very differently than they do to-day.

Turkey and the Philippines

IT IS also clear that this is a problem that mere palliatives will not solve. Rearranging frontiers in accordance with European animosities and ambitions, sending food and clothes and medicine periodically to keep alive the remnants of Turkish massacre—certainly the modern world should have some better method than this. Yet up to the present time this represents the acme of twentieth century statesmanship and philanthropy as applied to the Eastern question. It is the process of seeking to cure disease instead of removing the cause. If the European conference on Turkey can accomplish nothing more than another dealing of the cards, the Turkish problem will not have advanced a single step toward solution. There is, of course, only one possible way of establishing permanent civilization in this part of the world. In a very confused situation there is at least one definite lesson that five centuries have taught, that is that the Turk will never succeed in establishing order. The inevitable conclusion is that the Turk, as a ruling power, should therefore cease to exist. To extinguish a long established sovereign power is a great responsibility, which the progressive nations should not lightly assume; but instances may

STREET LETTER WRITERS
Turks like these in Constantinople are subject to the American system of inquisition known as the "Survey"

come when it is their duty to do so, and this is emphatically one of them. Twenty-four years ago the United States decided that the sovereignty of Spain must come to an end in Cuba, for reasons not unlike those which now apply in Turkey; and it acted on this decision quickly, successfully, and with the results most beneficial to Cuba and the world. Similarly civilized mankind has a mighty surgical operation to perform in the Ottoman Empire. But the American task in Cuba and the Philippines did not end with the expulsion of Spain and no more will the job be finished with the obliteration of the Sublime Porte. The subject populations of Turkey, in their present state of progress and enlightenment, can hardly be trusted with sovereign powers even over themselves. Some kind of independent authority must take charge of this territory and establish the basic necessities of democracy and civilization. The recent history of the United States again indicates the one possible programme. The American experience in the Philippines is the classic illustration of the most enlightened colonial methods. Here was a great area which for centuries had known little except inter-racial strife, whose people had been sunk in ignorance and degradation, in which communicable disease annually removed a considerable percentage of the population, and in which public schools, modern agricultural methods, and means of communication—railroads and highways—were all but unknown. Its population resembled that of the Turkish Empire in that it was part Christian, part Mohammedan; in intelligence and culture, of course, the Ottoman peoples represent a vastly higher stage of progress. Yet the work that needs to be done in Turkey is not dissimilar to that which the United States has accomplished so brilliantly in these Pacific islands. The chief thing is to elevate the masses in education and economic conditions, with the idea of preparing them for the eventual responsibilities of citizenship and self-government. The first work is that of sanitation; it would not take American sanitary engineers long to stamp out typhus, small pox, malaria, hookworm and the other infectious plagues which, perhaps more than any other extensive influence, hold back human advancement. The establishment of schools in all parts of the country would be the next logical step. The building of public roads, of railways, of electric lines would necessarily follow; the development of Asia Minor's great natural resources and agriculture would be essential parts of the programme. In ten or twenty years this great region would be one of the most prosperous and contented in the world. The point to be aimed at would not be the advantage of some particular European nation, the development of British, French, Italian, or American influence; the only decent object would be that elevation of the average man that is the only certain guarantee of human advancement. Financially such a programme would not be absurd, for the riches of the country, honestly handled, would easily carry the burden.

All this may be merely the counsels of an impossible idealism; it probably is, and in that one fact resides the difficulty of the situation. It was not a dream twenty-four years ago in Cuba and the Philippines; but America brings to such a problem of statesmanship a new set of ideas, a new conception of its responsibility as a nation, and these attitudes are different from those that control European diplomacy. Yet it would be too harsh to hold Europe seriously to blame; she has something behind her which the United States happily does not possess—a history; her difficulties are the result of those racial and religious rivalries and hatreds; those differences in language and social conceptions, those nationalistic struggles, which have been operative for two thousand years. These things really hamstring the best intentioned European statesmen. America knows nothing of such retarding impulses; that is the real reason why she is fitted, as is no other power, to lend a helping hand. There will be no permanent settlement of the "Turkish problem" until some such programme as that sketched above is adopted. And if America has anything to teach a distracted Europe this is the lesson it can teach. If the United States has any mission in the world, beyond cultivating its own interests, is it not in engaging in just such enterprises as this? Anything that suggests "entangling alliances" or aggression is necessarily antagonistic to the American genius; but there would be nothing of the sort in such a task; it would be a work of sheer unselfishness, engaged in only for the purpose of benefiting several millions of much suffering men, women, and children. Indeed it would only be an extension by the nation of the work which has been carried on

for three quarters of a century by private American agencies. American schools and American colleges, American doctors, American relief organizations have for years in this great region made the American name a synonym for all good works. The United States is trusted, by both Turk and Christian, as is no other country. The United States is also the only nation that could assume such a leadership without arousing those European jealousies and antagonisms that have baffled all efforts to cure the ills of the Near East. Such an enterprise would be as novel and refreshing an innovation, and accomplish as much in introducing new ideals into international relations, as did the Washington Conference.

At Last The "Lusitania"!

GERMANY is at last making preparations for paying damages on account of the *Lusitania*. On October 10 the most important claims commission in American history began its sittings in Washington. In the separate treaty made with the United States in August 25, 1921, Germany acknowledged her liability for damages suffered by citizens of the United States for illegal acts committed before the American entry into the war and after we had become belligerents. These damages fall into three great classes, known by the international languages as "categories." After the declaration of April 6, 1917, Germany seized the property of Americans in the Fatherland. She acknowledges her liability to restore or pay damages for such seizures. There are other injuries to American property and American citizens not so precisely defined, but Germany has assumed an obligation to pay for all such injuries. The destruction of American ships, and the destruction of American lives and property in the illegally sunk vessels of other nations, naturally come under this head. For the losses on the *Lusitania* Germany assumed responsibility in the course of correspondence that followed that tragedy; as claims involving $15,000,000 have already been filed the settlement will probably not be a small one. The third "category" includes the debts owed American citizens by the German Government and German nationals, which naturally fell into abeyance on the declaration of war; and Germany, in the treaty with the United States, assumed a full obligation to pay these.

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EDWIN B. PARKER

American member of the German War Claims Commission. This body, now sitting in Washington, is the greatest tribunal of the kind ever assembled. It is estimated that it will pass on claims that aggregate close to a billion dollars

The purpose of the commission which has recently begun its proceedings in Washington is to determine the validity of the claims presented and to assess the damages. It is really a judicial tribunal; Germany and the United States each has one representative and the third representative of both countries is known as the Umpire. The American representative is Mr. Edwin B. Parker. Both nations have likewise selected counsel, or, as they are known in proceedings of this kind, "agents"; the American agent is Mr. Robert C. Morris, of the New York Bar, who similarly represented the United States at its latest great proceeding of this kind, that held in 1904 to settle claims of many years' standing against the Republic of Venezuela. Commissions like the present one are nothing particularly new in American history; the most famous was the Geneva tribunal which

met fifty years ago to assess the damages that Great Britain should pay for the voyages of the *Alabama* and other English built confederate privateers; but never has a claims commission of the magnitude of this one had this country as a party. The *Alabama* arbitration rendered damages of $15,000,000; already several thousand claims, aggregating not far from $300,000,000 have been presented before the present tribunal; in all probability the amount will be found to reach as much as $800,000,000 or $900,000,000. The hearing of these cases, under the most favorable circumstances, will take a long time, and only a spirit of accommodation on both sides can prevent the proceeding from dragging for many years.

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JUSTICE DAY

Who has resigned from the United States Supreme Court in order to act as umpire on the German War Claims Commission. Ordinarily the umpire on such commissions is selected from a neutral country, but Germany requested President Harding to select an American for this place

That Germany desires to reëstablish the most friendly relations with this country has long been apparent, and at the recent meeting in Washington she gave expression to this desire in an unusual way. The treaty provided that the United States should select one member of the commission, Germany another and that the two conjointly should select the third, it being taken for granted that this third commissioner, who necessarily could cast the deciding vote in disputed issues, would be neither an American nor a German. Germany, however, as a mark of confidence in American fairness, requested President Harding to nominate an American for this place. Mr. Justice Day of the United States Supreme Court will therefore sit as umpire. Thus the commission meets formed of two Americans and one German—the jury, that is, almost seems to have been "packed" against Germany and "packed" by itself. Of course, no such term is appropriate in the present connection. What this broad-minded action really means is that Germany proposes to pay these claims, that she wishes to have the matter paid and closed as soon as possible, and that she will gain absolute justice by throwing herself upon the mercy of the American court.

The Way to Improve the Character of Congress

THE news from Washington that the House Committee on Buildings is preparing a bill providing for about $100,000,000 worth of new post offices and custom houses need cause no particular surprise. The latest session occupied itself almost exclusively with the tariff, the bonus and ship subsidies and the creation of a huge pork barrel of the type now suggested is quite in keeping with this kind of political thinking. That most of the new buildings proposed are not needed is evidently no particular reason why they should not be built. The excuse for erecting them is not the legitimate necessity of the public business; the inspiration, like that of the bonus, is exclusively political; Congressmen must find some way of justifying their existence to their constituents and thereby lay the basis for their reëlection. The mere fact that the Federal Treasury is facing a deficit is also no good reason for defeating this latest raid upon the public funds. That argument was also urged against the bonus, but the Congressional vote in favor of that expendi-

ture of more than four billions of dollars was overwhelming.

Yet there is a side to this development of the Congressional psychosis which is even more important than the sufferings of the public treasury. It is related to the whole problem of the decline in the character of legislative bodies—a decline which is not peculiar to the United States, but which is a symptom in all countries, especially in Great Britain itself. If any one wishes an explanation of the mentality and sense of public duty so commonly manifested in Washington, a study of the daily routine of the average Congressman will furnish it. How does the Congressman spend his time? How, under the present popular conception of the functions of a legislator, is it inevitable that he should spend it? Probably most people have a mental picture of a Congressman attending committee meetings, studying public documents, following with an attentive ear profound discussions of public questions at the Capital, constantly seeking out men and women who can keep him well informed on those great problems which he is called upon to decide. Unfortunately this picture is purely fanciful. In only rare cases does this type of Congressman exist. In most instances the Congressman is little more than an errand boy for his district. His time is largely occupied in performing personal services—in answering letters, receiving calls of constituents, piloting the people from home around Washington, obtaining favors for them at the departments, getting them offices and pensions, pursuing appropriations for rivers, harbors, public buildings, and other undertakings of a local kind. The effect of such activities must inevitably appear in the character of Congressmen and in the statesmanlike quality of the legislative chambers. The recent session gave rise to much criticism of this nature. A foreigner reading the American press would have been amazed at the disrespect that seemed to be felt generally for the gentlemen who are entrusted with the great power of making laws. The criticism chiefly urged was that Congressmen were not interested in big things; that the questions which are agitating mankind little disturb their mental tranquillity; that their outlook is provincial; that only measures which had an attractive force for votes seemed to inspire their efforts. These criticisms, to a great extent, are well founded; yet the point usually overlooked is that the system under which Congressmen work is responsible; so long as the American people regard their representatives as personal envoys, whose time, instead of belonging to the Nation, belongs to themselves, it is useless to look for any great improvement. There will always be plenty of men willing, for the $7,500 a year which the position pays, to perform the rather undignified duties which the post demands, but for the American of energy and ambition, who would enjoy a career which offered real opportunities for statesmanship, this occupation will have no great attraction.

ROBERT C. MORRIS

Of the New York Bar, the agent of the United States who will present war claims of American citizens against Germany for German depredations in the World War

The Next Step in Budget Reform

A GENERAL change in the method of conducting the public business must therefore be an indispensable preliminary to any great improvement in the intelligence of Congress itself. A new scheme which would take out of the hands of Congress a multitude of petty matters would leave the national lawmakers the time to attend to the more serious aspects of their work; it would thus confer a great boon upon Congressmen, or at least upon the more intelligent and ambitious members. The Harding Administration has shown a commendable interest in the reform of governmental procedure; in particular it has taken the first step in the creation of a Federal Budget. Yet the present budget system, though excellent as a beginning, is by no means complete. Such a complete budget would automatically take out of the hands of lawmakers most of the details which now so seriously interfere with their more important duties. Under a real budget system a legislator does not possess the right to introduce bills calling for the appropriation of the public funds; such appropriation bills are always presented by the responsible ministry; the legislature can decrease the amounts asked for, or refuse to vote them at all; the one thing it cannot do is to increase them. If such a rule were in effect at Washington, the Senators or Representatives could not constantly present measures granting pensions, erecting public buildings, dredging rivers, harbors and creeks, and the like. The improvement that would result in the conduct of the public business, and the enhanced dignity of Congress, are incalculable. There may be certain difficulties involved in introducing this change in Congress, but they are not insurmountable, and until this new principle becomes an active force it is vain to look for any material improvement in the lawmaking bodies.

Unemployment and Immigration

PERHAPS the most startling change in the present economic condition of the country is the increasing shortage of labor. Only a few months ago the newspapers were filled with alarming stories on the wide-spread prevalence of unemployment. The streets of all large cities were crowded with idle men looking for work; day by day the statistics published in Washington portrayed this condition as one of the most alarming facts facing the country. The year 1921 was a year of unemployment and distress; even as recently as last January and February there appeared to be few signs of improvement. Yet that condition has suddenly changed. The problem that confronts American industry at present is not unemployment but scarcity of labor. The steel companies have advanced wages twenty per cent., not for the purpose of preventing strikes, as is commonly supposed, but for the purpose of attracting the workmen who are sorely needed to man their mills. From all the industrial centres comes the same story of a labor shortage, a shortage not only of unskilled men, but of semi-skilled.

Naturally the enemies of the new immigration law seek to place the responsibility upon that measure. Yet it is not apparent that the blame necessarily lies in that quarter. That there is an immediate relation between the rougher type of labor and immigration is not disputed. For more than three quarters of a century the United States has found her laborers chiefly in the emigrating masses of Europe. That there has been a great drop in immigration is likewise a fact. The new immigration policy, however, has been in effect only one year; the decrease in immigration has been a matter now of nearly nine years. Immigration suddenly ceased with the outbreak of the World War; and it is the cutting off of this supply, extending over this long period, that explains the shortage from which American industry is now suffering. If the "quotas" permitted by the present 3 per cent. law had entered this country in the last eight years, and had remained here, there would be no scarcity of the kind of labor now so greatly desired in the industrial centres.

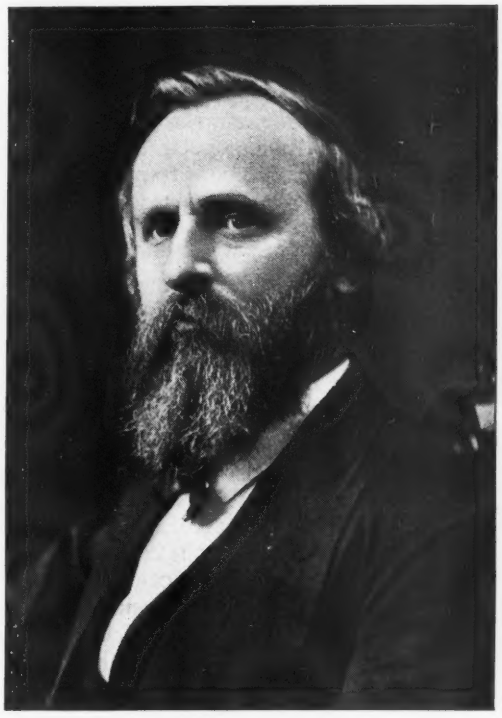
Nor is there any particular pertinence in the fact that the outflow of alien peoples in the year 1921-1922 greatly exceeded the inflow. Stress is laid upon the fact that 309,556 immigrants entered the country and that 198,712 returned to their European homes, leaving a net gain of 110,844. These departing aliens were for the most part Italians, Poles, Lithuanians, Greeks, and other Mediterranean and southern European laborers. This phenomenon is nothing particularly new; it has been a feature of immi-

gration for many years. Incidentally, the mere fact that these aliens come and go indicates that they are not a desirable type of immigrant; for what the country needs is not itinerant laborers, but permanent settlers and home makers. Nor need their return to Europe necessarily alarm the industrial sections which at present would like to have them for laborers. Their migrations merely reflect the labor conditions as they prevailed in the United States in the year 1921-1922. Why did these immigrants come to this country? Obviously because they were looking for work. Why did a considerably larger number return home? Simply because there was no work for them. That this was a period of distress and unemployment is well known. For a hundred years immigration statistics have been a complete barometer of industrial conditions; immigrants are always most numerous in boom times and always reach low water mark when times are hard. The present demand for workers will start the movement again; if it continues, there will not be the large return of aliens that took place last year.

Thus there seems little chance that the present law, in the long run, will deprive the labor market of its supply. At least there is no reason for the present alarm. It embodies a great principle which is essential to the future of the United States, and it should not be abandoned because there is at present a scarcity of unskilled labor for which it is by no means responsible.

An American President Who Is Coming Into His Own

IT IS always a grateful task to pay tribute to the qualities of a much misunderstood public man; the one hundredth anniversary of the birth of Rutherford B. Hayes, which has recently been celebrated by his native town, Fremont, Ohio, has therefore performed a useful service in placing before the new generation the facts in one of the most useful American lives of the nineteenth century. President Hayes's reputation has suffered chiefly because of two circumstances. The first was the cloud that affected his title to the Presidency. He is the only man in the list of American Presidents whose tenure of office was tainted. Into the merits



RUTHERFORD B. HAYES

The centenary of whose birth was recently celebrated. One of the most unfortunate of the Presidents in the circumstances of his accession. Time is justifying President Hayes as a conscientious and able executive

of that dispute it is not worth while to enter now. The only important point, so far as the fame of President Hayes is concerned, is that the proceedings of this exciting period reflected no dishonor upon himself. He was perhaps the saddest victim of circumstances in American history. In fact his personal behavior during this crisis was considerably more dignified and public spirited than that of his brilliant rival. That it was his duty as a citizen to accept the office when the count of the electoral college awarded it to him is likewise apparent. It would have been a traitorous act to refuse. Yet the net result of the whole affair, so far as Hayes is concerned, is that most people remember him as the "President by one vote," as the man who for four years held an office to which another statesman probably had a more valid right. But students of American history have long since discovered that President Hayes had a genuine claim to public respect.

"Respect" is unquestionably the proper

word; Hayes had none of the qualities that arouse admiration or enthusiasm. No President was less magnetic; not Hayes the man to fire crowds with his eloquence. The photographs that are familiar suggest that placidity, that commonplaceness which seemed to be the conspicuous traits of American public men in the two decades following the Civil War. Hayes's virtues were of the homely orthodox kind; the fact that he refused to be inaugurated on March 4th, because it was a Sunday—confining the proceedings to the strictly necessary business of taking the oath of office—and that he astonished foreign diplomats by refusing to serve alcoholic drinks at White House banquets—on these occasions "water flowed like wine," according to Hayes's witty Secretary of State, William M. Evarts—fixes Hayes's position as a man of the world, and indicates likewise his most conspicuous characteristic, an unyielding conscience. Not Washington himself, or Cleveland, determined more strictly than Hayes his every official act in accordance with the dictates of this inner light. He had no appetite for public life; he served as governor and as President only because his party virtually drafted him in both cases; and he rigidly refused to let any consideration but his sense of duty regulate his official behavior. His cabinet was hailed as one of the ablest in American history; it contained so brilliant a man for Secretary of State as Evarts, and as Secretary of the Treasury Hayes appointed the man who was probably the greatest American financier since Hamilton—John Sherman. But the thing that gives Hayes's Administration a contemporary interest is that he was the first of the "reform" Presidents, as that word is understood to-day. He was the first, that is, who took a powerful stand against the professional politicians of his own party, solely in the interest of the public service. He fought the Bosses with a vigor that made him the legitimate predecessor of Cleveland and Roosevelt. He astonished his party associates by issuing edicts forbidding them from using their offices for political purposes; and when several of the most powerful disregarded his instructions, he promptly chopped off their official heads. One of those who suffered such unprecedented decapitation was Chester A. Arthur, Collector of the Port of New York, whom a strange whirl of circumstances afterward placed in the Presidency. President Hayes became a bulwark of Civil Service reform at a time when such an advocacy was regarded as the manifestation of a feeble mind; he was the father of that important change. He also offended the "bloody shirt" politicians by his sharp reversal of Republican policy in reconstruction; he believed that the time had come to end the Civil War; he boldly asserted his conviction that the South could best be restored, if the white people of the North would join forces with the white people of the South. He therefore, in 1877, withdrew the army from this suffering region; this was a bad move for the Republican party, since it destroyed the great programme of making the South Republican by the use of the Negroes and bayonets—in fact, the South has been solidly Democratic from that day; but it was an act of disinterested statesmanship and a demonstration of character in the Republican President who did it. These and other similarly independent acts, and a clouded title, doomed Hayes to the rank of a "one term" President. Yet they form a sufficient justification for the tributes of respect and understanding that recently greeted the centenary of his birth.

A New Reason for an Improved Diplomatic Service

ONLY a few years ago it was popular to sneer at the diplomatic service as an expensive superfluity; the late Mr. Champ Clark even went so far as to propose its abolition. It is therefore encouraging to note that a public man of somewhat different calibre, Mr. Hughes, not only indorses its usefulness but demands its extension, and Mr. Hughes brings forth a new reason for this reform. Far from being a useless inheritance from the Middle Ages, the coming time will have an ever increasing need of diplomatic agents. The Washington Conference has enforced this lesson. That conference has prevented the competition in naval armaments; it is a great practical step toward the elimination of war. The more we decrease preparations for war the more we shall need that other agency for settling disputes between nations—diplomatic negotiation. If a nation is to dispense with its generals and its admirals it will have to fall

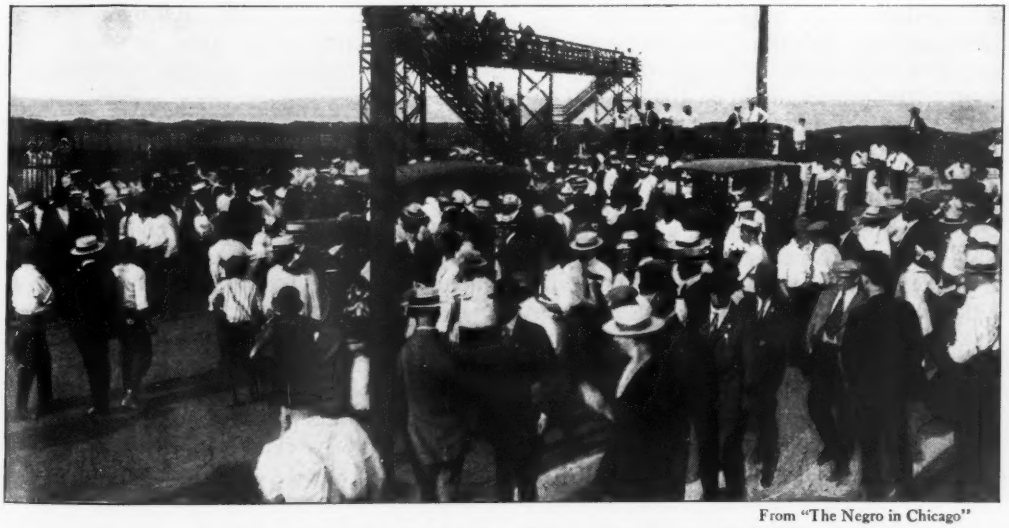
back in ever increasing extent on its ambassadors. The ideal situation will be obtained when there are no soldiers or sailors or heavy artillery or machine guns, but an efficient corps of diplomatic agents constantly at work ironing out the differences that will arise among the most friendly peoples.

The American diplomatic service, as a means of solving international rivalries and quarrels, has another great advantage over warships and heavy artillery. The present generation does not need to be told that war is an extremely expensive and wasteful proceeding. But the diplomatic service is a financial marvel among government departments; not only does it not cost the taxpayers a penny, but it actually makes money. In fees and other payments it takes in each year a million dollars more than it costs. Obviously it is a phase of governmental activity that should be encouraged.

These things are not only an argument for the diplomatic service but for an improved diplomatic service. The changes that should be made are now sufficiently well known. The larger positions should be made accessible to the man who starts at the bottom; the big places should not be bestowed as a consideration for campaign contributions; embassies should not only be purchased in all the important capitals but should be financed at public expense; the diplomatic service, in a word, should be made a career. It is a hopeful sign that Mr. Hughes favors all these things, and that steps are already being taken to realize them.

The Causes of the Chicago Race Riot

IN JULY, 1919, a race riot broke out in Chicago in the course of which twenty Negroes and fifteen white people lost their lives, and 537 people were injured. This outbreak in a Northern city was shocking in itself; the fact was, however, that it was only one episode in a display of racial antagonism that was almost epidemic throughout the country. Omaha, Washington, Boston, Tulsa, and other cities were scenes of similarly disgraceful performances. What was the cause of all this popular fury? "Race riots" have not been unknown in Northern cities, but for many years nothing remotely resembling these disturbances had blackened our great centres of population. Evidently they had some common explanation. The country therefore owes a great debt to the Chicago Committee on Race Relations, which was appointed soon after the riots, and which has just published, through the University



From "The Negro in Chicago"

CROWD LEAVING THE BEACH WHERE THE RIOT STARTED

Chicago has recently investigated the causes of the race riots that disgraced that city in 1919. Chicago was only one of several communities that suffered in this way almost at the same time. The report finds that the outbursts were closely related to the great migrations of Negroes from Southern states to Northern cities which took place in war time. The Chicago riot was precipitated by an apparently trifling incident at one of the bathing beaches

From "The Negro in Chicago"

A CROWD OF RIOTERS

Running to surround a house into which a Negro escaped

of Chicago Press, the results of its investigations. This report scientifically analyzes the causes of the recent race riots, so far as Chicago is concerned, and it may be assumed that these causes explain the similar tragedies that took place in other cities.

A phenomenon that obtained much prominence in the public prints four or five years ago was the migration of Negroes from the South into the great cities of the North. This migration seemed to have been the direct cause of the attacks that subsequently followed. The movement apparently gave certain Northern cities, especially Chicago, their first experience with the Negro problem. In 1910, this population in Chicago was 44,000; in 1920, the census disclosed that it had increased to 110,000, and this growth of about 66,000 may be taken as representing Chicago's share of the 500,000 Negroes who came north after 1914. Its Negroes previous to this accretion had been of the settled kind that were found in most American cities; practically all of them earned their living by some kind of personal service; they were for the most part well behaved and hardly ever clashed with white people, or, indeed, had very close contact with them. But these new Negroes from the South were mainly plantation workers; their purpose in coming north was to obtain the high wages which were then offered by industrial plants. The suspension of immigration caused by the war, and afterward the entrance of the United States, had shut off the supply of low grade European labor which had for years manned the stock yards and other industries of Chicago. Southern Negroes largely filled in this gap. Negro women, who had supported themselves chiefly by domestic service, now began to find employment in the mail order houses, the millinery shops, the clothing factories, and other industries. All this was unprecedented in the story of the Negro race; it represented a great economic improvement; the Chicago Negro found himself, like the white man, a workman in the trades; the day when he would have to content himself with being a waiter, a barber, a porter, or a laborer of the lowest grade was apparently passing. The fact that in the main the black man now received the same wages paid his white associate, also magnified his new importance.

The "Inferiority Complex" in Negroes

BUT any one who even slightly comprehends that subtle yet very definite thing known as "race consciousness" will understand that these phenomena of equality must inevitably make trouble. White men found themselves obliged to work side by side with Negroes; white women now discovered that their working companions were frequently Negro women. With most white people this would not have made hard feeling; but the white workers concerned, especially those in the stock yards, represented a low order of intelligence and social control—they were Lithuanians, Poles, and other immigrants from Central Europe; a philosophic restraint is not their leading quality. Bad blood resulted. The mere fact that the labor unions refused to admit Negroes on even terms gave the new

employees another grievance; and the fact that they were used as strike breakers increased their unpopularity. But the so-called "social contacts" proved more serious incentives to racial antagonisms. It seems to be generally agreed that these Southern Negroes were not especially favorable specimens of their race. For the most part they were ex-field workers; they were illiterate, their manners were exceedingly uncouth, their clothes outlandish and bad smelling, and their bewilderment at their new surroundings caused them to behave in a way that made them still more unpopular. The mere circumstance that they were not "Jim Crowed," as they had been in the South, led to strange psychological reactions. Suddenly finding themselves sitting side by side with white people in trolley cars and on the elevated roads—an experience to which they had been entirely unaccustomed—the poor ignorant creatures did not know how to behave, and imagined that a bumptious assertion of independence was essential to their new dignity. It was a manifestation of the "inferiority complex" under rather pitiful circumstances. They sprawled in their seats, they insisted on sitting when white women were standing, and they were constantly on the outlook for insults. Negroes now began to appear in places where their presence had previously been unknown. They found living quarters in sections which poor white immigrants had for years regarded as their own; their children began to mingle in large numbers with white children in the public schools; but perhaps what caused the greatest ill-feeling was the increasing presence of Negro men and women in the public recreation centres. The public parks became a favorite resort; Negro couples filled a considerable percentage of the park benches; Negro baseball and basket ball teams preëmpted a considerable proportion of the public fields; Negroes did not hesitate to appear in the municipal dance halls; they insisted on sharing with the whites the public bathing beaches; the mere fact that, in large numbers, they attended band concerts, added to the general ill-feeling.

The Chicago report presents other facts, but these are sufficient. None of these grievances directly caused the riot, but these were the influences that, working ceaselessly for several months, created that atmosphere

CLARK HOWELL
Editor of the Atlanta *Constitution*, who may be regarded as a representative of the public on the coal commission

of hostility and that "race consciousness" which finally had a disastrous outcome. Most race riots begin with some atrocious act—such as the Negro murder of a white man or an assault upon a white woman. But not this one; the provocation, indeed, so far as one appears, was nothing more serious than the presumption of a Negro bather at one of the beaches, who drifted on a railroad tie from the part of the water tacitly set aside for Negroes into the area preëmpted by the whites. He was stoned, was hit in the head, sank and drowned. The "riot" was on. The resentment, the race antagonism, that had been slowly developing for more than a year, now found expression in the usual insane fashion. The whole proceeding not only pictures the human motives that cause a display of this kind, but suggest also the utter hopelessness of the problem. The present commission makes many suggestions for a general improvement in race conditions, but none that are particularly definite or practicable. That the police and municipal authori-

JUDGE SAMUEL ALSCHULER
Of Chicago, a member of the coal "fact" commission selected evidently for his knowledge of the legal aspects of the coal problem

ties were extremely lax and that greater vigilance in these quarters can curb such outbreaks at the beginning is apparent. But a race riot is a strange thing; it bursts out suddenly, sometimes for no especially tangible reason, runs its course, and then suddenly ends. The most encouraging fact is that the Chicago masses show no particular desire to repeat this disgraceful episode.

The American Question Mark in Constantinople

THAT politically Americans maintain an attitude of stolid indifference to the problems of the Ottoman Empire is a long standing grievance—and never more of a grievance than it is now; that, in other matters, Americans are more active than any other people, was never so apparent as at the present time. American schools and colleges are the chief educational influence in Turkey; and now another peculiarly American institution has knocked for admission at the gates of Stamboul. That eminently occidental procedure known as the "social survey" has penetrated successfully the innermost recesses of Islam. This kind of an investigation made its first sensational success with the "Pittsburgh Survey," published fifteen years ago; since then few American cities or villages have escaped the ministrations of this peculiarly American type of inquisition. The purpose is to collect a mass of detailed information about "social" conditions. How do the masses live? In what kind of houses? How much rent do they pay? In what occupations do they engage? How much do they make? Are the children employed? How much do they earn? How many hours do they work? Is the head of a family a responsible citizen, or does he squander his earnings on drink? Have any of the children been in jail? Are the boys embryo criminals and the girls inclined to waywardness? How do the widows support themselves?

Information of this kind is doubtless valuable in the study of social problems and as a foundation for social legislation; but there is something about the method of procedure that suggests the bustling and inquisitive West rather than the dreamy and unobtrusive and ever courteous East. So little interest does the leisurely Turk feel in "social" questions that he cannot even tell the population of his own empire or of Constantinople itself. Under ordinary circumstances he would look upon such questions as those indicated above as rude to the point of indecency—as in themselves almost a cause for war; that their purpose is "social" improvement would not help the situation much, for the suggestion of improvement is in itself a sacrilege; is it not a suggestion that miserable mortals can make a better world than the one which Allah suffers to exist? Yet again American persistence has triumphed; and "The Pathfinder Survey of Constantinople" in ten sections, is soon to be published by Macmillan.

For more than a year, Americans, most of them graduates of American women's colleges, have visited all sections of the ancient city, note book in hand, questioning men, women, and children, compiling elaborate tables of statistics, arranging all their facts under appropriate headings. That these energetic young women have not been tied up in sacks and thrown into the Bosphorus in itself shows

what changes have recently come over the Golden Horn; this would probably have been their fate fifteen or twenty years ago. Now, however, although the investigations have discovered almost every phase of human life in Constantinople, one kind of person they have not discovered, and that is the terrible Turk. A more than oriental graciousness has everywhere seconded their efforts. The Sheik-ul-Islam, the official head of the Mohammedan religion, opened up the remotest recesses of the city; and the Turkish masses, who have lived for centuries without arousing the slightest interest anywhere in their existence, regarded the proceeding as a kind of social attention and were vastly flattered. The poor hamals—the human burden bearers of Constantinople—somewhat jealous because of the interest aroused by candy peddlers, itinerant water carriers, ice cream men, broom sellers, street letter writers, and the like, made a special plea to the social workers: "You are studying the way other people live," they pled, "study, too, how the hamals live." Yet, mingled with all this amiability was a general puzzlement as to what the cross examination was all about. The genuine courtesy of the Turk, his oriental spirit of repose, and his acquiescence in the universe as at present conducted, are brought out in the following verbatim reports of one of these personal visits. The woman interviewed is a widow:

Question. What kind of work do you do?

Answer. I, Hanum Effendia? (Lady, Madam)

Q. Yes, you, Madam.

A. What should such a lowly, humble person as I do?

Q. Do you go out and work by the day?

A. Well, when I am called I go. But there are many to be called and few who call. Seldom am I called.

Q. But when you are called, what do you do?

A. I, Hanum Effendia?

Q. Yes, you, Madam. Do you wash?

A. Why, Hanum Effendia, sometimes I clean the floor, or sometimes I may clean the clothing of those who walk on the floors that I have cleaned.

Q. And in that work how much do you gain?

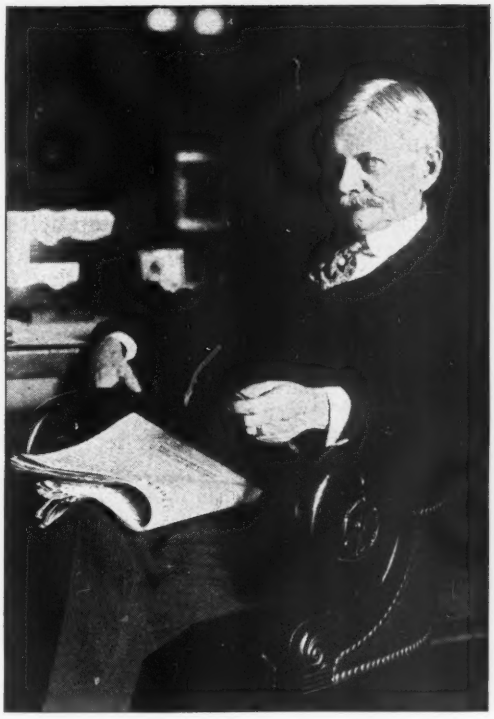
A. All I gain is eaten.

Q. But what do you spend for eating, say in one day?

A. That I have never reckoned in all my life.

Q. But do you gain enough for eating?

A. Hanum Effendia, when I do not gain enough, that day Allah does not give me hunger.



EX-VICE-PRESIDENT THOMAS R. MARSHALL

A member of the new coal commission. His appointment indicates at least one way in which the United States can make use of its retired executives

Q. Well, do you gain two liras ($1.60) in a month?

A. I gain only what Allah gives, but he is great. We must not criticize.

Q. Perhaps you are not strong enough to work every day. Are you well?

A. Yes, Hanum Effendia, thanks to Allah and to you I am well, or at least so-so.

Q. And your children, are they well?

A. Yes, Hanum Effendia, thanks to Allah and to American milk, they are very well.

It is quite apparent that, if the masses of Turkey are to be "uplifted," the impetus must come from without.

The Most Prosperous Americans are Found on the Pacific Coast

WHAT is the richest part of the United States—the richest, that is, in the sense of having the largest income? Probably most people would have no difficulty in answering this question. That

the Middle Atlantic States have the largest amount of liquid cash would naturally be expected from their great population and industrial development. And from this standpoint the Middle Atlantic States are the most prosperous, and, as would be expected, New York, with an income of more than $9,000,000,000, leads all the rest, whereas Nevada, with $65,000,000, brings up at the tail of the procession. The figures have recently been compiled by Dr. Wesley C. Mitchell and published by the National Bureau of Economic Research.

Yet there is another way in which to gauge prosperity and perhaps, upon the whole, it is a more satisfactory test. That is the per capita distribution. Is that section the richest which has the largest aggregate income or that in which the individual income is the largest? Probably most philosophers would incline to the latter view. And in this regard the Pacific States have a slight advantage over the Middle Atlantic—$796 as compared with $673. Yet New York State, with an average income per person of $874, is still at the head of the list.

This study also discloses the earnings of farmers, which, in some parts of the country, are high—as incomes go. In 1919 farmers in the Pacific States averaged $2,800 a year and in the West North Central States $2,300. The few remaining agriculturists who are attempting to scratch a living from the discouraging hills of New England are obliged to content themselves with $1160, while Alabama and Mississippi yield their farmers less than $900 a year.

The Twenty-Six Best Children's Books

WHAT are the twenty-six best books for children? That is a question with which American school teachers and the American Library Association have been recently busying themselves. The purpose has been to select for children in school grades one to eight, the best books for a one-room school. Ballotting at these conferences disclosed that Louisa M. Alcott's "Little Women" almost unanimously obtains the first place. Other books that rank high as favorites are "Alice's Adventures in Wonderland," "Through a Looking Glass," "Robinson Crusoe," "Tom Sawyer" and "Treasure Island."

The other twenty books chosen for this children's library are as follows:

Nicolay. Boys' Life of Abraham Lincoln
Kipling. Jungle Book
Andersen. Fairy Tales
Æsop's Fables
Pyle. Merry Adventures of Robin Hood
Stevenson. Child's Garden of Verses
Lamb. Tales from Shakespeare
Arabian Nights
Malory. Boy's King Arthur
Van Loon. Story of Mankind
Wiggin. Rebecca of Sunnybrook Farm
Stevenson, Burton E. Home Book of Verse for Young Folks
Dickens. Christmas Carol
Irving. Rip Van Winkle
Mother Goose
Dodge. Hans Brinker
Hagedorn. Boy's Life of Theodore Roosevelt
Hawthorne. Wonderbook
Seton. Wild Animals I Have Known
Spyri. Heidi

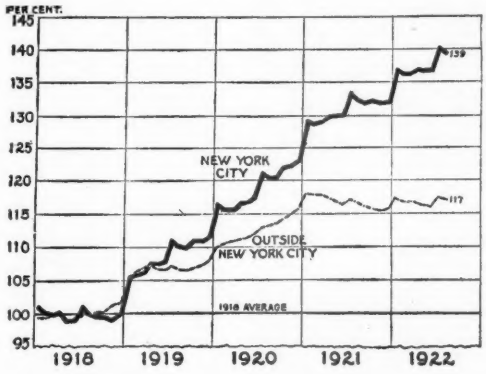
This list emphasizes once more that the writing of children's books is a branch of literature in which Americans have always excelled. That nearly half of these classics are American is not necessarily explained by the fact that these were selected by an American jury for American schools; children's literature is international; and, possibly excepting one or two volumes in which the American patriotic impulse is strong, this list would probably be as acceptable in Great Britain as here. "Little Women" has always appealed as strongly to English girls as to American, and "Hans Brinker" has long been recognized in Holland itself as alone the most popular of children's books.

America Becoming More Thrifty And Saving

SAVING money is a habit that has material bearing on one's success in life. Therefore the growth of the school savings banking system is a most encouraging development, for the easiest time to form a habit is when a person is young. A report made at the recent American Bankers Association Convention showed that 1,271,029 school children deposited $5,500,000 in school savings last year. Those children are taking lessons in thrift. They make something of a game of it, and when they get the habit it

is like golf—there is the desire to better their best previous score. And, like golf, it is a habit that sticks pretty well through life.

The war taught many older people to save who had never formed this habit in their youth. That is one of our few economic gains from the war. American people must have an object in view in saving other than simply the accumulation of money. "To win the war" gave them such an objective, and it was reached by buying twenty-one billions of Liberty bonds. That resulted in a forced growth of the habits of saving and bond buying and has resulted since the war in a



THE TREND OF SAVINGS DEPOSITS

Deposits of fifteen Savings Banks in New York City and fifteen in the Second Federal Reserve District outside New York City. (Average deposits in 1918 = 100 per cent.) An illustration of the persistence of habits of saving acquired during the war

larger absorption of securities in this country than was ever sold here before the war.

And savings deposits have gone steadily upward since the last war loan was floated in 1919. On this page there is a graphic presentation of the trend of deposits in savings banks in New York City and New York State, made by the Federal Reserve Bank of New York. It shows some of the results of the saving habit acquired during the war and also how little effect the after-war depression had on this habit outside of New York City.

Figures compiled by the Savings Bank Division of the American Bankers Association indicated that there were nearly seventeen billion dollars of savings deposits in the banks of this country on June 30, 1921. These were represented by upward of thirty million separate accounts and at that time there were also 5,800,000 members of "local" building and loan associations who were saving money for the buying of homes or for other purposes. That meant one savings account for every three persons in the country, or about one and a half per family.

Unfortunately there are no earlier or later figures with which to compare this vast total of savings deposits a total approximately equivalent to the amount of Liberty Loan and Victory Loan bonds outstanding on July 31 last. But reports to the Comptroller of the Currency from the national banks of the country show a growth of more than three quarters of a million in the number of their savings accounts in the twelve months since June 30, 1921, and a gain of $88,500,000 in their savings deposits. On June 30, 1922, they held record-breaking savings deposits of $3,046,054,000, credited to 8,873,327 depositors, on which they were paying an average rate of interest of less than 3.75 per cent.

In Pennsylvania alone, in 779 national banks, there were more than a million and a half savings accounts, aggregating $532,807,000, or more than enough to cover the entire Anglo-French loan that was floated with such difficulty in this country in 1915. The evidence that the United States is becoming a nation of savers and investors is growing more and more impressive.

Will the Human Race Finally Starve?

WHEN an able man has spent a third of a century studying and helping to solve the problems which relate to one field of human activity, then certainly his views are worthy of attention. And when the subject that engages his time is whether the human race is simply going through a brief geologic period, only to become extinct like species that have gone before, the gravity of the problem becomes at once apparent. The personal interest of every man is concerned.

Mr. Eugene Davenport, for many years dean and director of the University of Illinois School of Agriculture, from which position he recently retired to resume farming in Michigan, is this authority; and what has come to loom largest in his mind as an unsolved problem, not only in agriculture but in racial economics as well, is the effect of mediocre men on the fertility of the land and its power

to yield, and therefore on national wealth and security.

In a valuable article contributed to *Farm and Fireside*, under the arresting title used at the head of this editorial, Mr. Davenport said: "We are very rapidly building up a great country, very largely at the expense of the virgin fertility of our lands. A few farmers here and there are applying fertilizers intelligently; but, considered as a national enterprise, the enormous crops which we are taking out of our land from year to year are so many subtractions from our native store of wealth which is the free gift of nature."

In this month's WORLD'S WORK, John K. Barnes brings out this same point and says that both the farmer and the city dweller have been living on the farmer's capital. He shows by figures that about one third of what the farmer now receives for his grain should be returned to the soil to make up for the fertility drawn out in its production. Very few farmers are doing anything like that. As Mr. Davenport said, "Nationally speaking, we are doing to our fertility exactly what we did to our great pine forests, only the process is slower and less evident. It is none the less certain."

This agricultural economist frankly admits that he has no solution for the problem, though, as he says, a solution must be found. "The fact that the great mass of farmers," he continued, "insist upon taking for their own advantage everything they can get out of the land makes it all the more difficult for good farmers to treat the land as it deserves, because the two compete together in the open markets of the world. This fact doubles the difficulty." Mr. Barnes, in an earlier article, showed how the modern coöperative marketing movement was helping to reduce this competition and also bringing to the farmer a larger part of the consumer's dollar. That is the most hopeful economic movement in American agriculture to-day. Mr. Davenport, however, as yet sees little hope from this movement or from anything else as a solution of the problem of general soil protection. His only suggestion is to emphasize in season and out of season the natural duty which everybody owes the land who undertakes to draw sustenance from it. "Nobody expects to milk a cow without providing feed. No more should he expect to milk the land and skim off the cream of fertility that has been thousands of years in accumulating without some degree of restoration."

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JOHN HAYS HAMMOND

Who, as an engineer and an expert on mining conditions, brings a wide experience to the technical problems involved in the coal situation

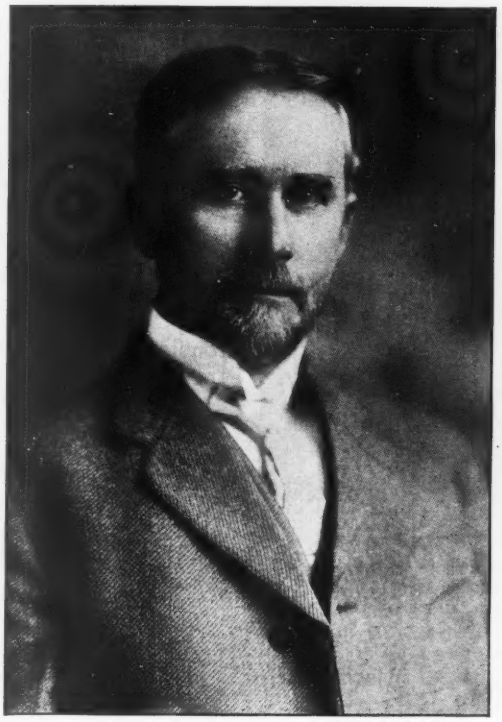
The problem is one for the city dweller to consider as well as the farmer, for the city dweller will starve first.

Life Insurance and Alcohol

THE latest witnesses on the side of teetotalism are the life insurance companies. Already the American Medical Association has decided that alcohol is not a heart stimulant, but a heart depressant, and that it is therefore not useful in medical practice. And now the great life insurance companies have found that drinkers, even moderate drinkers, are less desirable risks than the increasing fraternity of abstainers.

The matter is best summarized in a recent report to the New York Life Insurance Company by its Chief Medical Director, Dr. Oscar H. Rogers. He reviews the work which has been done upon the subject by himself and others in like positions; and he reports—as it were—to his financial executives, their policy holders, and the public generally. Dr. Rogers says teetotalism pays enormously. His decision is that rum kills.

What is it the average man wants to know? In a private letter Dr. Rogers puts that question somewhat this way: Living as you now are with the habits you now have, alongside of a man whose daily life does not differ from yours except that he is a non-drinker, as you are not, or a moderate drinker, if you are the abstainer, in two groups of men thus classified, how many chances of death do the one and the other have to face? And in his study of "The Effect of Alcohol upon Longevity," Dr. Rogers and others answer this question. They take groups of men; abstainers and non-abstainers, merely occasional users and daily users of beer or daily users of spirits, and then they tell us how the different mutual life insurance companies have made or lost money by carrying the risks of these groups.



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CHARLES P. NEILL

Whose knowledge of labor problems will add to the strength of the new coal commission

One should imagine these groups in terms of the graves they fill to see the full significance of the facts. Taking all the groups about whom the various companies have gathered statistics sufficient to be used in this study, it is found that if they used but one graveyard they would need 100 graves tomorrow. If they split into abstainers, vs. all others, the abstainers would fill 43 graves and the others 57. The abstainer reduces his chance of death to-morrow one-seventh. The others good, bad, and indifferent, but not abstainers, increase their chance on the average by a seventh.

But this isn't half the story. Among those non-abstainers are the men who drink once a month. What are the facts about those who drink spirits once a day? Here then is a different set of statistics or rather there are two representative sets. The Northwestern Mutual Life Insurance Company reports that, if a whole group of representative men, including all from total abstainers to the very hardest drinker whose policy is written, be compared with its own sub-group of daily users of spirits, the men in the latter class face three chances of death tomorrow where the average man faces two. Or take another set of the same statistics, from the old line conservative New England Mutual Life Insurance Company, expressed a little differently but pointing the same moral. In this group of men the wife who sits opposite an abstaining husband knows that he has a chance of death to-morrow which is valued and ascertained by the experts and which can be called 100 per cent. The wife who sits opposite the individual whom this company calls a moderate user should know that he has a 213 per cent. chance of death to-morrow as compared with the abstainer.

Turn to another class of statistics. Combining the experience of as many companies as they could, the expert statisticians got a large group containing within itself 30,686 moderate or conservative users of alcohol.

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EDWARD T. DEVINE

A student of social problems, whose usefulness on the coal commission consists in his knowledge of the living conditions of the working classes

On these men the companies insuring them lost $530,000 as compared to the average of the whole group. These same experts found about 13,500 men who used alcohol to excess occasionally, though the excesses were neither frequent nor prolonged. In some cases, a number of years had elapsed since the last excess. Dr. Rogers reports that the drug seemed to have permanently damaged all these lives. Remember that every man had appeared a good enough risk to the company which accepted him. But the excessive deaths in this class cost the companies insuring them $420,000 and yet it was not one-third the size of the class of more temperate drinkers on whom the companies lost only $530,000.

Some objections occur to any one, and Dr. Rogers answers most of them. May it not be that the difference is due in part to the natural differences of occupation in classes which as a social matter use alcohol or do not? Two special reports on this have indicated that the abstainers used in statistical tables are a fair cross section of our ordinary population. Does moderation in alcohol carry with it temperance in other things and is the latter the real life saver? That may be, but it is a good argument for true temperance and Dr. Rogers thinks it cannot explain away the statistics of alcohol. Do users have a life happier enough to make up for it all? Dr. Rogers reports that among 11,323 who made a steady and somewhat liberal free use of alcohol the deaths from cirrhosis of the liver were five times the normal and those from diabetes, tuberculosis, and pneumonia twice the normal. Also twice as many men in this class were enough dissatisfied with their happiness to die by their own hands. That does not sound as if the exhilaration was a durable satisfaction!

Are the statistics prejudiced against alcohol? Dr. Rogers answers that on the contrary they are based on accepted lives, accepted by examiners who used care and who ordinarily declined any man of bad habits or bad record in this respect.

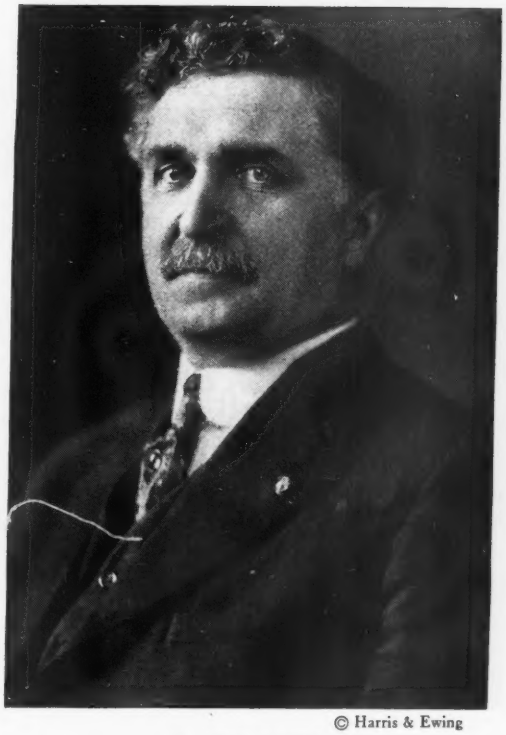
Finally, what does the expert advise? He says: The evidence before us is conclusive that the so-called Anstie's limit of 1½ ounces or three tablespoonfuls of alcohol a day is far too liberal. . . . It is as if there were a direct relation between the amount of alcohol used and the amount of damage done to the body." And so he concludes that it pays not to insure any users of alcohol. The more rum one takes the less it pays to be interested in his life and in the risk of his death.

North Carolina Dramatizing Its History

THE University of North Carolina has adopted a plan for preserving the history and traditions of the state which promises to be as instructive as it is popular. For many years Harvard University has had a course in playwriting; this department has justified itself by turning out several playwrights who have won extended fame and fortune on Broadway and in London. The Harvard course, however, aims to produce playwrights of universal scope, whereas the course recently established at the University of North Carolina has a more restricted field. North Carolina has a history particularly rich in legend as well as in actual achievement. The mountaineers in the western part of the

state are among the most delightful and historically interesting survivals in this country. Practically every mountain has its story and the wilds of Scotland itself are no more full of feuds and adventure and romance. The association of Sir Walter Raleigh with this state and the lost colony, the Croatan Indians and the Mecklenburg Declaration, the stirring scenes of the Revolutionary War, to say nothing of the excitement of the Civil War and of the reconstruction period that followed, certainly contain material enough to keep many playwrights busy for a considerable time.

These are the traditions and the historical incidents to which the new course in playwriting at the North Carolina University is now devoting its energies. Even though the successful playwrights who have been developed at Harvard may not materialize at Chapel Hill—though there is no good reason why they should not—the work is well worth while. It is educational in the highest sense and university extension work of the finest kind. More and more modern universities are realizing the new conception—that it is their business to be part of the community in which they exist; to preserve the best traditions of the state and to familiarize its people with all good thoughts and actions. Certainly no more attractive way can be found of doing this than that which the University of North Carolina has now discovered. The fact that the plays are not only written by the students but staged and acted by them gives the University an undergraduate activity of an especially wholesome and elevating kind.



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G. OTIS SMITH

A geologist who has specialized on coal. It is hoped that this new investigation will show the way to the control of this great national resource which will protect the public interest and render justice also to employer and employed

A Christmas Appeal

THE WORLD'S WORK gladly gives space to the following letter:

DEAR READERS OF THE WORLD'S WORK:

I can see you as I write, in beautiful, cosy, and happy homes reading this Christmas number and planning for the Glad Season of home reunions and gift-giving. It is the little children's special day, and already mothers are working and shopping and hiding the treasures that will make so many child eyes sparkle—so many child voices ring with joy and laughter. In my work for the families of men in prison throughout this country I am thinking of mothers whose eyes are dim with tears. They can buy no gifts, plan no surprises, cannot even get warm clothing or shoes or sufficient food for that coming Xmas day. Will you spare a little out of your happy home for these whose lives are shadowed by prison bars—the innocent sufferers who have done no wrong?

Gifts of money or clothing will be gladly welcomed and officially acknowledged by

MRS. BALLINGTON BOOTH,
Volunteers of America,
34 West 28th Street,
New York City.

SWAPPING LIBERTIES FOR A HIGH YIELD

Every month in this part of the magazine the WORLD'S WORK *prints an article on investments and the lessons to be learned therefrom*

AT THE annual convention of the Investment Bankers Association of America, in Del Monte, Calif., in October, the following resolution presented by the Committee on Government bonds was adopted by a unanimous vote:

> Because of objections on the part of the United States Treasury Department, and because any other course of action by members of the Investment Bankers Association may be cited by unscrupulous dealers as precedent for their own actions, all members of the Association are hereby requested to refrain from any campaigns conducted either by public appeal, circulars, advertisements, or the concerted action on the part of salesmen, which have for their purpose the inducement of owners of Government securities to exchange same for other forms of investment.

Adoption of such a resolution as this helps to keep the investment banking business on the high ethical plane where it should be maintained. To urge investors to exchange United States Government bonds for any other kind of security is to influence people to lower the degree of safety of their investments. The best type of investment banker would not be inclined to urge such a change. When the investor himself expresses the inclination to make the change it is a different matter. Then the investment banker can properly advise with him as to what is best to buy. In individual cases he might even suggest it, but not generally.

During October, two printed circulars came to the desk of the Investment Editor issued by two of the rapidly expanding real estate mortgage bond houses and designed to influence people to exchange Liberty bonds and other securities for the 7 and 7½ per cent. real estate mortgage bonds offered by these houses. There are several points in connection with these circulars that investors should take into consideration before they are tempted to act upon such advice.

Leaving out of consideration the ethical nature of the proposal itself, against which the Investment Bankers Association has now gone on record, there were certain methods used in making this proposal that seem open to criticism. For instance, one of the circulars had this to say regarding the safety of the investment:

"An easing of the Government money market and a bettering of the Government's cash position has resulted in many of these Government bonds touching par. Thus without any or with practically no loss of principal, Liberties and Victories bearing 3½ per cent. -4¾ per cent. can be exchanged for real estate gold bonds bearing 7 per cent.-7½ cent. and with safety of principal assuredly maintained."

The inference which the uninformed reader would naturally draw from this last clause is that these real estate bonds are as safe as United States Government bonds. This inference would not be correct, and when one realizes the number of uninformed investors who own Liberty bonds, the possibility of many people being misled by it can be appreciated.

Following this statement the house presented a table showing a "profit of from $225 to $525" in ten to fifteen years on the exchange of various issues of Liberty and Victory bonds for 7 per cent. real estate bonds. In justice to this house it should be said that this circular has not been used in general mailings since the Investment Bankers Association, of which it is a member, took action in the matter. The other house included in its circular "An Actual Example" showing the "gain" derived from an exchange of $5,000 Second Liberty Loan 4¼s, $6,000 United Kingdom of Great Britain and Ireland 5½s, and $2,000 American Telephone and Telegraph 6s for $9,000 of one of its 7 per cent. issues and $5,000 of one of its 7½ per cent. issues.

This brings up the most important point of this whole matter from the investor's standpoint. As long as one holds United States

Government bonds he needs no diversification of his investments. He has the diversification of the entire natural wealth of this country and of all of the activities of its hundred and five million people back of his bonds. If they are not good, then what other investment in the country is good? But when he starts down from this highest type of investment to get a higher return on his money, he should at once begin to apply the theory of diversification and distribute the risk in order to maintain as high an average degree of safety as possible consistent with the higher rate of return he desires.

Take the case of this "actual example." Here was an investor who possibly made his first investment in Liberty Loan bonds. Then he added some of the British Government external loan 5½s brought out in this country, and later some American Telephone and Telegraph Company 6 per cent. notes. He was getting a higher return each time but he was diversifying his investment by going into different fields and he chose from among the best of the foreign government bonds and American public utility issues. If he had been seeking a still higher return, he would have needed a still greater diversification of his investment to help compensate for the greater risk.

Now what does the "Exchange Bureau" of this real estate mortgage house suggest to this man? That he give up his well diversified list of the finest investments in exchange for two issues of its bonds, one secured on hotel property, which depreciates rapidly and depends largely on the character of its management for success, and the other on an apartment house property in the same city. It is true the past record of the house and of its issues speaks well for its bonds, but what of the principle of diversification that should be applied more completely when one seeks a higher rate of return on his money such as these bonds offer? To add a few of them to the already well diversified list might be sound investing, but to convert this fine list entirely into such bonds would be far from conservative. To believe that an exchange of Liberty bonds for such issues would leave one "with safety of principal assuredly maintained," as the other house said, would be to deceive oneself.

This magazine is still receiving so many inquiries regarding real estate mortgage bonds that it seems well to repeat some of the words of caution regarding them that were published on this page a few months ago. In the first place it should be said that there are houses of excellent reputation that have operated successfully in this field for many years and whose issues have won a high place for themselves in the confidence of investors who do not need readily marketable securities. On the other hand many new houses have recently entered the field and are taking advantage of the growing demand for such bonds to bring out issues that are not based on the same amount of experience.

This development has coincided with the advance in building costs and the inflation in real estate values. In other words, many houses have entered the field at the crest and it remains to be seen how they will come through the lower ground that is undoubtedly ahead. It seems likely that there will be failures among them which may result in losses to investors.

And this factor of inflation and high costs creates an uncertain element throughout the entire field. For if properties against which loans are now being made come into competition with pre-war constructed buildings the time will very likely come when their earnings will be reduced. And if real estate values fall from their present levels, the equities behind many real estate bonds will suffer. The real estate man of experience, of course, realizes all this and his issues should be protected against it. But he has to compete with these other houses in making his loans as well as selling them, and the borrower frequently wants to get as large a loan as he can. For the investor, therefore, it seems that it might be well, for the time being at least, to confine his purchases in this field to bonds of the earliest maturities, which are less likely to be affected by any change in real estate values, and to houses of the longest experience and best reputation in the field. And he should never forsake the principle of diversification.

The Jews in America

The First Man Off Columbus' Ship a Jew. Three Waves of Jewish Immigration: Spanish, German, and Russian

By BURTON J. HENDRICK

I HOW THEY CAME TO THIS COUNTRY

The wave of anti-Semitism, which has been sweeping over the world since the ending of the World War, has apparently reached the United States. An antagonism which Americans had believed was peculiarly European, is gaining a disquieting foothold in this country. The one prejudice which would seem to have no decent cause for existence in the free air of America is one that is based upon race and religion. Yet the most conservative American universities are openly setting up bars against the unlimited admittance of Jewish students; the most desirable clubs are becoming more rigid in their inhospitable attitude towards Jewish members; a weekly newspaper, financed by one of the richest men in America, has filled its pages for three years with a virulent campaign against this element in our population; secret organizations have been established for the purpose of "fighting" the so-called "Jewish predominance" in American life; Congress has passed and the President has signed an immigration law chiefly intended—it is just as well to be frank about the matter—to restrict the entrance of Jews from eastern Europe. It is an impressive fact that these manifestations of a less cordial attitude toward the Jews find their counterpart in another country which, in modern times, has been friendly to them—that is, England itself. That anti-Semitism should prevail in Russia, Germany, France, indeed in the whole continent of Europe, is not surprising; but its development in the Anglo-Saxon countries is something entirely new. Yet such conservative organs as the London Morning Post *and London* Spectator *are picturing the activities of English Jews as one of the most disrupting and dangerous influences in British life.*

In the long tragedy of Israel there is no misfortune quite so deplorable as this increasing unfriendliness in the great liberty-loving Anglo-Saxon democracies. For two thousand years hatred and persecution have been its portion. This hostility has usually been explained as one of the natural consequences of that ignorance, religious bigotry, and racial consciousness which chained the mind and conscience of Europe in the Middle Ages; that it would disappear with the general diffusion of intelligence and the growth of free democratic institutions has been taken for granted. But Great Britain and America are the most liberal countries in the world; the United States especially stands for a free chance for every individual, irrespective of his racial origin or his religious faith. Certainly here is a development that calls for explanation.

What are the facts about our Jewish population? What part do they play in American life? Is it true that they dominate American finance, American industry—that they hold the purse strings of the United States in their hands? Are they the brains of the Nation in the professions, in education, in journalism, in literature, in music, in the drama? Are they increasing every day their influence in politics and attaining a disproportionate share of the public offices? How many Jews are there in this country? Where did they come from? Why did they come here? Above all, is it true, as is so commonly charged, that the Jews constitute an utterly unassimilable element in our population, that they can never become Americans, never think like Americans, that in this country, as elsewhere, they form a kind of Gulf Stream in the great ocean of humanity—that they are part of the general mass and yet entirely distinct from it? These are only a few of the questions that must be answered before the fundamentals of the problem can be understood.

THERE are no official figures as to the number of Jews in the United States, for the Jews themselves have strenuously—and successfully—opposed any attempt to enumerate them; this is the reason that the United States Census does not enroll our people according to religion, but according to nationality. Our great Jewish population therefore appears in the documents of the Census Office as "Russian," "Austro-Hungarian," "German" and the like. But the highest Jewish authority, the *Communal Register* estimates—on apparently excellent grounds—the Jewish population of New York City at 1,500,000; and numerous statisticians who have exhaustively studied the subject figure that the Jewish population of the United States ranges from 2,500,000 to 3,000,000. An error constantly made is that of regarding this Jewish population as homogeneous; the fact is that it is composed of several elements; a point not commonly grasped is that certain types of Jews differ from each other almost as much as the Jews themselves differ from Gentiles. Unless this truth is completely understood the real nature of the so-called Jewish "problem" will not be comprehended. It is only until a comparatively recent time that America has had anything in the nature of a Jewish "problem"; this is not only because the Jewish immigration has increased so

THE PRINCIPAL HOME OF THE JEWS

The impression that the Jews are scattered all over the face of the earth needs considerable qualification. There are about 9,000,000 Jews in Europe, and 7,000,000 of them are found in this shaded area. They are practically all found in that country which was the old kingdom of Poland. Here nearly all the hosts of Israel gathered in the Middle Ages. Russia, Austria, and Prussia proper have few Jews; they got their present Jewish population as a result of the partition of Poland in the Eighteenth Century. It is the migration of this great mass of Jews from the old Polish province to the United States that gives America its present Jewish problem

Courtesy Yale University Press

A MOVING PICTURE FILM OF THE DISCOVERY OF AMERICA

The assertion is now being made that Christopher Columbus was not an Italian of Genoa, but a Spanish Jew, or at least half Jew. Whatever the merits of this contention it is an established fact that his crew contained a number of Jews and that the first member of his expedition to land on American soil was a Jew, Louis de Torres

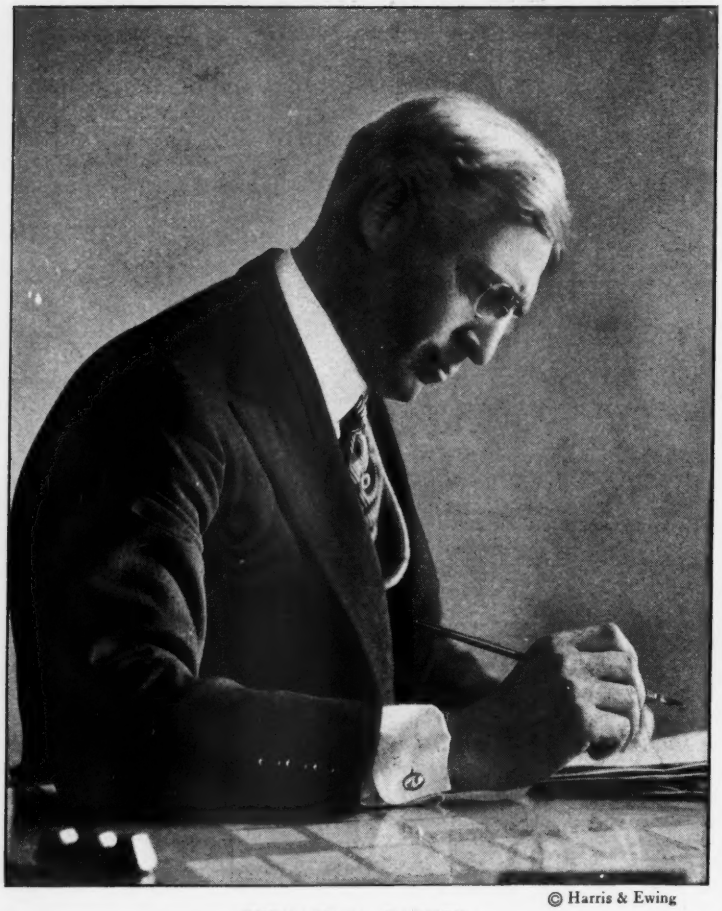
enormously in twenty years; the explanation that goes much deeper is the fact that the Jewish influx from eastern Europe comprises a type of Jew very different from that which had previously been a more or less familiar figure in American life.

No descendant of the *Mayflower* is prouder of his American origin than the Jew whose ancestors have lived in this country for two or three generations. It is impossible to say an unkinder thing to such an American aristocrat than to confuse him indiscriminately with the recent arrivals from Poland and Russia. The basic fact in the Jewish question is that Jewish immigration divides into three important classes.

Perhaps many Americans who regard themselves as "native stock," whose ancestors fought in the Colonial Wars and the Revolution, may be surprised to learn that there is a Jewish element in the American population with a pedigree as long as their own. The first shipload of Jews to reach American soil landed in New York City when that little community was a Dutch settlement known as New Amsterdam. These early American Jews, like most representatives of their race who have since sought America, were refugees from persecution; in this case the object of their flight was the Spanish Inquisition, which, in the Seventeenth Century, was a flourishing institution in Spanish America. These exiles belonged to that branch of their people which had for centuries been regarded as the aristocracy of Israel; they were the type known as the Sephardim—the name by which the Jews of Spain and Portugal had been long known. This Sephardic Jew was such a different person, physically and intellectually, from the more familiar Northern Jew that certain authorities have regarded him as belonging to an entirely separate race, a race which has nothing in common with the sons of Israel except the Jewish religion. His origin goes far back into antiquity. He was living in Spain in the days of Julius Cæsar; certain historians have attempted to identify him with the Phœnicians, who were early colonizers in Spain—they founded the city of Cadiz—and were unquestionably a Semitic race. These

REBECCA GRATZ

Most celebrated of American Jewesses, the friend of Henry Clay and Washington Irving, and generally believed to have been the original of Rebecca in Sir Walter Scott's "Ivanhoe"



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BERNARD M. BARUCH

The best known American descendant of the famous Spanish Jews who comprised the first phase of Jewish immigration to this country. These Jews, known as the Sephardim, are generally acknowledged as the aristocracy of Judaism. They retain many of the characteristics of the Spanish grandees of the Middle Ages and have always disdained close association with other branches of the race

derivations are probably fantastic, but the fact remains that the Spanish Jew had lived long enough in Spain to take on at least one Spanish characteristic, and that was an intense and haughty pride. He has always regarded himself as a being infinitely superior to the other members of the scattered hosts of Israel, and this superiority his co-religionists have generally acknowledged. Physically the Spanish Jew, and especially the Spanish Jewess, had decided claims to distinction. This was the type of Jew that Rembrandt liked especially to paint; his well-known "Jewish Doctor," with his thin intellectual features, his black silken beard, his piercing black eyes, his straight—entirely un-"Jewish" nose—perhaps represents the Spanish Jew at his best. Possibly the Spanish haughtiness is a legitimate inheritance, for, in Spain, during the Middle Ages, there was a constant mingling of Jewish and Gentile blood. There are those who explain the languorous beauty of the Spanish woman of to-day on this ground; her dark and dreamy eyes, her olive skin, her graceful body, are really, according to this theory, Oriental traits which she has derived from her remote Jewish ancestors. Whatever basis there may be for this idea, there is unquestionably a delicacy in the features of the Sephardim, men and women, which most observers would regard as decidedly non-Jewish; not theirs the thick lips, the curly hair, the swarthy complexion, the hooked nose, or the round heads, which are generally accepted as Jewish characteristics. Neither do they manifest certain traits of behavior which a not too friendly eye sometimes stigmatizes as "Jewish." In manner, the Spanish Jew is neither servile nor bumptious; in act his carriage is usually not lacking in a genuine Castilian grace; he does not cringe before his superiors or browbeat those beneath him; he is invariably soft spoken; he moves with dignity, and he has always been distinguished for elegance and good taste in dress.

The aristocratic quality of the Sephardic Jew is unquestionably explained by the unusual position which he had held for centuries in the Spanish Peninsula. At times, it is true, he was the victim of ferocious persecution; yet there were century-long intervals when he was left at peace, and permitted to develop socially and intellectually in accordance with

his own genius. His religion made him obnoxious to both the other faiths that controlled Spain for so many centuries, the Catholics and the Mohammedans, yet among both his accomplishments had given him an important position. At times they afflicted him with the discriminations that were the common fate of the Jews in the Middle Ages, yet his skill in administration, in finance, in scholarship, and the arts made him indispensable to both Moor and Christian. "The Jews reign in Granada," was the wail of a Moorish writer—a wail that has a decided modern ring,—"they have divided between them the city and the provinces and everywhere one of this accursed race is in supreme power. They collect the taxes, they dress magnificently and fare sumptuously while the true believers are in rags and wretchedness." In the main this gives a fair picture of their position and activities, for, as a racial group, the Spanish Jews were rich and well educated; they were the financial and commercial leaders of Spain; at a time when banking was an infamous occupation and the taking of interest a ground for excommunication the Jews naturally monopolized money-lending; they were the physicians and scientists—"there is not a noble or a prelate," says one monkish writer, "but keeps a Jewish devil as a physician." Their intellectual eminence is sufficiently indicated by the fact that Spinoza, the great philosopher, was a Spanish Jew, his ancestors having been expelled in 1492, at the time of the great persecution. Besides these intellectual pursuits, the Spanish Jews achieved important rank in the state and even in the Church. An interesting phase of their sojourn in Spain, indeed, and one that has great bearing upon the question of Jewish assimilation, is the extent to which they changed their faith to Catholicism and married into the greatest families of Spain. Many a distinguished court official and many a cardinal and bishop had a large mixture of Jewish blood, and it is an historical fact that King Ferdinand, the husband of Queen Isabella—and a terrible persecutor of Jews—was himself descended from a Jewish ancestor. So important did the Spanish Jews become that they enjoyed one privilege which Jews in no other country possessed during the Middle Ages and that was the right to own

REMBRANDT'S "THE JEWISH DOCTOR"

Rembrandt liked to paint the Spanish Jew. This shows how, in the refinement of his features, the dignity of his manner, and his general intelligence and breeding, the Spanish Jew represented an entirely different type from the millions of poverty-stricken refugees who have been flocking to this country in recent years

landed property. The greatest of them maintained the almost royal estate of a Spanish grandee.

The background of the race thus furnishes a sufficient explanation for that pride and exclusiveness—a pride and exclusiveness directed chiefly against their own co-religionists—which has always characterized the Sephardic Jews even in the United States. And, up to the outbreak of the American Revolution, these were practically the only kind of Jews who lived in this country. Their migration to American soil was merely another outcome of the persecution which reached its height in 1492. The conquest of the Moors, the unification of Spain under Ferdinand and Isabella, and the increasing strength of the Catholic Church, inspired an outburst of Spanish fanaticism, which found its chief expression in measures directed against its Jewish population. The Inquisition itself was established in Spain for the particular benefit of the Jews. This institution had no interest in orthodox Jews, of course, for the purpose of the Inquisition was to stamp out heresy, and the Jew, not being a Christian, obviously could not be a heretic; but there was a peculiar type of Jew that enlisted its most persistent ministrations. The existence of this strange breed of Jew, and its existence in great numbers, indicates the peculiar position which Israel had obtained in this great Catholic dominion. He was known as the *Maranno*—a Spanish word which means "damned" and "hog"; another designation was *crypto-Jew*, or *Converso*. He was a Jew who was supposed to have embraced the Christian religion; the fact that, in 1492, there were more than 100,000 Marannos in Spain, gives some idea of the extent to which the formal acceptance of Christianity had taken place among this supposedly most tenacious of all races. But the trouble arose from a general suspicion that these converts were not Christian at heart, and that they had merely taken this new religion as a means of escaping the social and legal disabilities that were inflicted upon the race. That they indulged in Judaism in secret, that they practised upon their sons the covenant of Abraham, that among themselves they clung to the Jewish dietary laws—all these charges were constantly made and popularly believed. And in the main the accusations probably were not untrue; a large number of Marannos doubtless remained faithful to Catholicism and their blood flows in a considerable proportion of the Spaniards of the present time; but the great majority were Christians only as a matter of convenience and profit. And this was the circumstance that led to the establishment of the Spanish Inquisition. Its original purpose was to spy out alien backsliders, both Moors and Jews, and to bring them back into the fold of the true church. The setting up of this tribunal merely marked the beginning of the persecutions of which the Jews now became the victims. As a means of transforming Jews into good Christians the Inquisition proved a failure; and the government, in 1492, decided on a more effective method of purgation; it issued an edict expelling all Jews from Spain.

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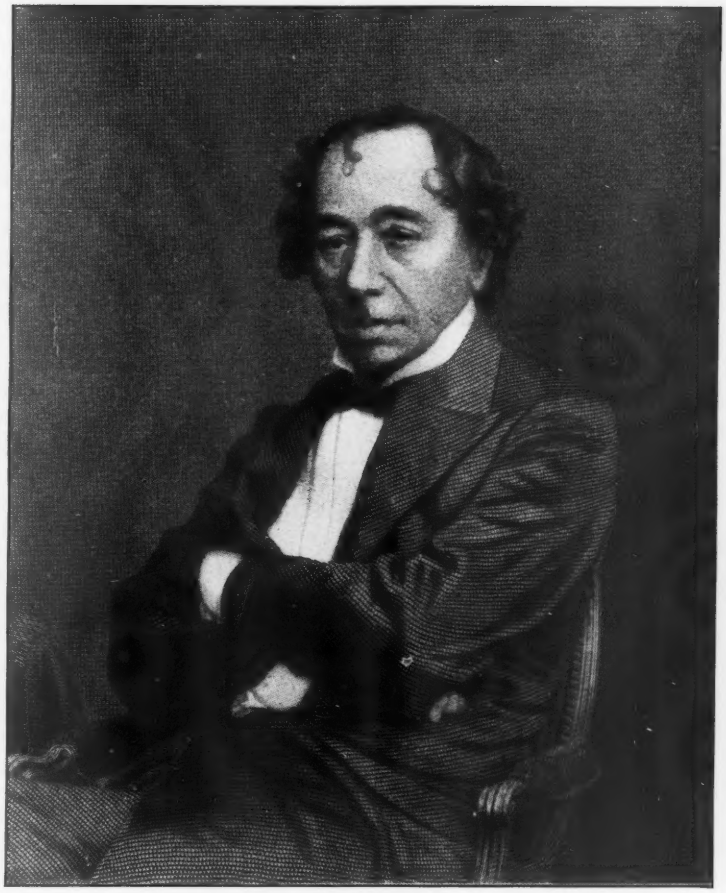
DR. ABRAHAM JACOBI

The most distinguished of the German Jews who came to this country in the 'forties. This German Jewish immigration was merely one phase of the German immigration of that period. Like the German "forty eighters," the Jews were liberals in politics and were attracted—as was Doctor Jacobi—by the free institutions of this country

The cruelty with which this law was enforced, the dreadful sufferings which it brought upon about 200,000 souls, is a familiar story; it finds a modern counterpart, even in details, in the expulsion of the Armenians by the Turks in 1915; the point that is chiefly interesting at the present time is that this expulsion gave America its first Jews. The date is significant—1492; that was the same

year that Columbus sailed on his first voyage; indeed his diary describes how, as he passed out of Palos on his way to the unknown Western Sea, he spied a miserable caravel loaded with Jews—exiles under the recent decree. Certain modern Jewish historians insist that Columbus was himself a Jew, or at least a Marrano; what is indisputable is that his expedition contained several Jews, and that the very first man to land on the Western Hemisphere was a baptized Jew, Louis de Torres. The influx of Spanish Jews which followed was never large in its proportions, compared with migrations of the present time—indeed more Russian Jews have frequently reached the United States in one year than the entire number expelled from Spain at this time—but it was interesting in its quality. The great mass of the exiles distributed themselves in more friendly European countries, especially in Holland, in Italy and above all, in Turkey, where their descendants in great numbers live to-day, still speaking the Spanish language of the days of Ferdinand and Isabella; but a certain number found their way to the New World, establishing their homes in the Spanish colonies almost as soon as they were founded. But these colonies were still Spanish, and in most of them the Spanish Inquisition was promptly set up; the Jews were still Marranos, and as such subject to its investigations; persecution again started them on their travels, and the only hospitable havens in the New World were the Dutch and English settlements. Thus the Spanish Jews began to arrive on American soil long before the Declaration of Independence. At first their welcome was not especially cordial. In 1654, a ship—referred to above—containing twenty-seven reached New Amsterdam, but Peter Stuyvesant, the Dutch Governor, received them with exceedingly ill grace, and it was not until a year afterward that, under peremptory orders from the West India Company—in which several influential Spanish Jews were stockholders—he gave them permission to reside permanently in the little Dutch settlement.



BENJAMIN DISRAELI

The great British statesman, the most famous English descendant of the Spanish Jews expelled in 1492 by Ferdinand and Isabella

Here they and their descendants have lived for the succeeding two hundred and sixty years. The Spanish synagogue at Central Park West is to-day not only the most venerable Jewish congregation in New York, but almost the oldest religious body in the American metropolis; it is older than Trinity Church by more than fifty

BENJAMIN ALTMAN

The great New York merchant, a representative of that immigration of German Jews that marked the second phase of Jewish immigration to the United States. Mr. Altman's start in life was exceedingly humble

years. This Jewish community—and similar Sephardic colonies were established in most important American cities, such as Boston, Philadelphia, Baltimore, and Charleston—had since led a career of exclusiveness and hauteur that is typically Spanish. As in Spain centuries ago these Israelites constantly associated with the best in the intellectual and social life of the old grandees, so to-day the New York Mendozas, Cardozos, Acostas, Pintos, and Cordobas—for they all still retain their old Spanish names—find their most congenial associates among cultivated Gentiles. They have always looked down upon their Russian co-religionists, and even upon the Germans, as inferior breeds. No anti-Semite among the native American stock has ever regarded the poor Polish immigrant with greater aversion. There was a time when a Spanish Jew or Jewess who married a German or Russian co-religionist would be promptly disowned; the hostility to such alliances was much stronger than it has ever been between Protestant and Catholic. The Sephardim have always had their own graveyards in which German and Russian Jews have not found rest. Part of this feeling has been due to ancestral pride; part had a more rational basis, for it is incontestable that, from most points of view, the Spanish Jews are superior to other representatives of Israel. There are only a few of them; they are nearly all rich or at least prosperous; they are merchants, bankers, and land owners; they are not pawnbrokers or peddlers or rag-pickers; and they have a distinct talent for public life. It is no accident that the most distinguished Jewish statesman of Great Britain, Disraeli, was a descendant of Spanish Jews and that the greatest public man of American Jewry, Judah P. Benjamin, Secretary of State of the Southern Confederacy and probably the most adroit brain in the Secession movement, belonged to the same branch of the race. It is also significant that the Jew who has reached the most powerful position of any member of his race in recent American life, Mr. Bernard Baruch, also traces his origin to the Jews of Spain.

So long as the Jewish population was limited chiefly to Spanish Jews America had nothing that remotely resembled a Jewish "problem." Before the American Revolution practically the whole Jewish population of this country consisted of these Sephardim. They played an honorable part in the Revolution and lived on terms of friendship and respect with the other racial elements. There were only about 2,000 of them in the whole United States at that time. Just how many there are now is not known; that their number is steadily decreasing is apparent and here again the explanation has a great importance; the Spanish Jews are becoming fewer through inter-marriage not with other branches of the race, but with Gentiles. In England it is said that the Spanish Jews have practically disappeared, and, here again, through inter-marriage with Christians. I have instanced above three Sephardic Jews who have reached high public station in Great Britain and the United States: Disraeli, Benjamin, and Baruch. All three of these men married Christians. The tendency that was so common five and six hundred years ago in Spain, when cardinals

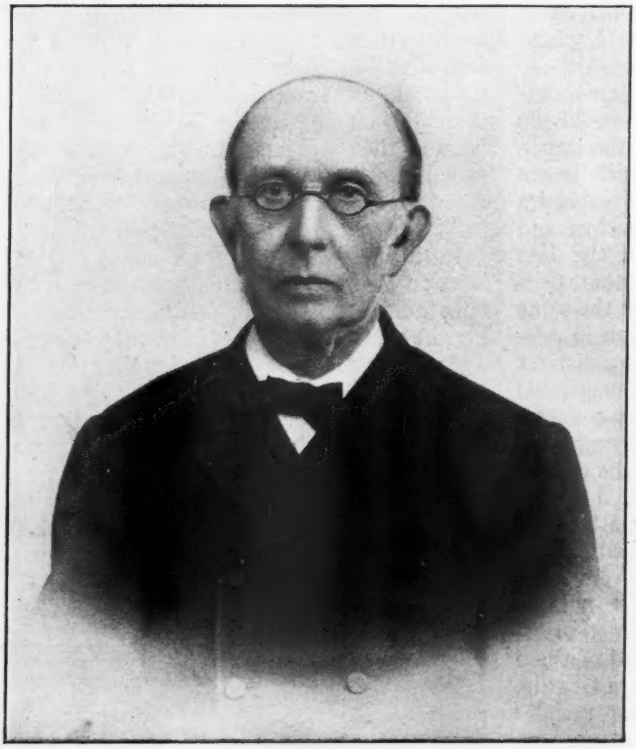
and kings acknowledged a mixture of Jewish blood, is similarly apparent in the England and America of the present time.

Neither did the second phase of Jewish immigration create anything that could be called a "problem." This was the much larger influx of German Jews, which began soon after the Battle of Waterloo, reached a considerable proportion in the 'forties and 'fifties and fell off appreciably in the late 'seventies. These dates indicate that German Jewish immigration had about the same rise and fall as German immigration in general, and it is a fact that it was not a distinct movement but was merely part of the general flow of German immigrants to this country. German Jews came here for the same reason that other Germans came; in part the motive was economic, the desire to get a better chance at life, and in part the motive was political. German Jews participated extensively in the German liberal movement of '48; when it failed they emigrated in large numbers, precisely as did their Christian associates; the two most distinguished of these political refugees were Carl Schurz, a Gentile, and Abraham Jacobi, a Jew. But racially and culturally the German Jew seemed an entirely different person from his Spanish predecessor. He belonged to the second and northern division of Israel, the type which the Jewish writers designate as the Askenazim. Physically he was probably inferior to the Sephardim. His features were inclined to be coarser, his lips thicker, his hair more woolly in its texture, his head round rather than long; his physical type was not invariably brunette, for blond hair and blue eyes were not uncommon. These points, however, can be pushed too far; the women were not infrequently exceedingly beautiful, and the most famous of American Jewesses belonged to the Germanic branch. This was Rebecca Gratz, a Jewess distinguished for her beauty and piety, and for her friendships with eminent Americans. There is a tradition that Henry Clay was an unsuccessful suitor, and one of her most distinguished friends was Washington Irving. This later association had important literary consequences; Irving was likewise a close friend of Sir Walter Scott, whom he used frequently to visit at Abbotsford; it is said that his description of Miss Gratz, of her loveliness of person, the fineness of her character, her devotion to her religion and her race—a devotion that had prevented her from marrying, most of the men with whom she associated having been Christians—so fired the romantic imagination of Scott that he put her in the novel that he was then writing. In this way it happened that Scott's most famous woman character, his Rebecca of "Ivanhoe," was drawn from Rebecca Gratz of Philadelphia.

In the main, however, the German Jew was inferior, in manners, intelligence, and social adaptability, to the Spanish type. In numbers he was much greater; from 1815 to about 1880, when German Jewish immigration, on a large scale, came to an end—in this following the course of German immigration in general, of which, as already said, it was merely one phase—probably not far from 200,000 German Jews arrived, though scientific statistics are not available. With them arrived those characteristically Jewish figures —the rag picker, the itinerant peddler, the pawnbroker, the petty tradesman. These

JUDAH P. BENJAMIN

Secretary of State in the Southern Confederacy, probably the most distinguished of American Jews. Like Disraeli, he was a descendant of the Spanish branch of his race



M. POBIEDONOSTSEFF

The great Russian enemy of freedom and democracy, whose persecution of the Russian Jews started the great immigration to this country

German Jews were not workers; for the most part they were middlemen. Many of the best known Jewish families of the United States founded their fortunes in these humble occupations. The Seligmans, who established one of the most important Jewish-American banking houses, were originally peddlers and clothing merchants; so was Solomon Loeb, who founded the great banking house of Kuhn, Loeb & Company; and Benjamin Altman, who died the owner of the most distinguished department store in New York and the possessor of one of the greatest collections of paintings ever assembled by an American—a collection which, with fine public spirit, he willed to the Metropolitan Museum of Art—is said to have started his business career with a pack on his back. Mr. Oscar S. Straus, ex-Ambassador to Turkey, has recently given, in his very interesting memoirs, a charming picture of a German Jewish family attempting to establish itself economically in its new environment. Mr. Straus' father was an itinerant peddler in the South; he drove a wagon from plantation to plantation, disposing of a miscellaneous cargo of "Yankee notions." Such a peddler was a welcome figure in Southern life preceding the Civil War; his coming was an annual event that was eagerly anticipated; he usually became the guest of one of the planters in the community in which he set up his temporary emporium, taking his meals at the family table; his host would never accept pay for this entertainment, but the Jewish merchant, as an acknowledgment of the hospitality, invariably made a parting gift to the wife or daughter—not uncommonly an unusually fine piece of dress goods. It may well be imagined that the arrival of an exotic figure of this kind, with his conversation of great cities and his reminiscences of European life, gave a welcome and bazaar-like color to the somewhat monotonous life of a Southern plantation; and this scene also is typical of the entirely kindly relations that prevailed sixty years ago between the native population and the Jewish immigrant.

The great point to be kept in mind is that these German Jews did not congregate in vast colonies in the great seaboard cities. New York had its slums in the era preceding the Civil War, and they were located practically where they are to-day—in the great section east of the Bowery and south of Fourteenth Street. Here a condition of overcrowding existed which was even more malodorous than that of the present time; but the inhabitants were almost exclusively Irish and German immigrants. The fact that the German Jew was not a factory worker or a laboring man, but a small tradesman, necessarily caused him to distribute himself pretty generally throughout the country. He was thus found in every state, large and small; he was a constant figure in all Southern cities and towns; he followed the western tide of migration after the Civil War; his little hastily assembled store, pitched frequently under a

tent, was a common sight in the early California settlements; the Jewish packman occasionally appears in the pages of Bret Harte; and the Jewish peddler early became a stock figure on the American stage. Perhaps the public feeling now and then was a little contemptuous; the Jewish sharpness in trading created a veritable literature of Jewish anecdotes; but the American attitude was always good natured; the idea that this race was a "menace" to American institutions never occurred to the most harebrained of contemporary thinkers. In certain respects the German Jew displayed a greater tendency to "assimilation" than did his Spanish predecessor. The change in the ritual of the synagogue, for which the German Jew was responsible, is most significant from this point of view. Fundamentally this represented an attempt to Occidentalize somewhat the Jewish services—to make them more like the proceedings in Christian churches. Meetings were held Sunday instead of Saturday; English sermons were introduced; organs and choirs became regular features of the programme; the men removed their hats and the women appeared in bonnets instead of shawls. The German Jews greatly shocked their more conservative Spanish co-religionists by the extent to which they ignored the dietary laws; ham and bacon not infrequently appeared upon their breakfast tables; and oysters, lobsters and other forbidden creatures tempted the Jewish appetite as irresistibly as the Gentile. Jewish children formed a small minority in every public school and high school; a still smaller contingent appeared in all the colleges—thirty and forty years ago Yale, Harvard, and Princeton usually had four or five in every graduating class; now and then a German Jew was elected to one of the most exclusive city clubs—though here, it must be admitted, progress was more difficult. It would be absurd to deny that a certain prejudice existed against the Jews, even in the days when the Spanish and German elements constituted almost exclusively American Israel, but it was not intense or bitter, and never reached the proportions of a public issue. Occasionally the desire of Jews to be exempted from the provisions of Sunday laws—on the ground, that, as orthodox Hebrews, they kept their establishments closed on Saturdays—caused a ripple of dissatisfaction; the refusal of summer hotels to admit them led to several law suits of sensational character; but, in the main, the Gentile population showed little alarm about their progress, and anti-Semitism was a word whose significance few Americans remotely understood.

CZAR ALEXANDER II

Who was murdered by Russian Nihilists in 1881. This event inspired that persecution of the Russian Jews which led to the great migration to the United States

The facts to be kept in mind are that the Jewish population before 1880 consisted almost exclusively of Spanish and German Jews, or their descendants; that they were comparatively few in number; that they were bankers or tradesmen, large and small; that they did not form a compact mass of wretchedness in large cities; that, in education, manners, and social opportunities their past did not compare unfavorably with that of the other immigrating races. It is the year 1881 that marks the beginning of the American Jewish "problem" as that word is commonly understood. Then began the influx, on an enormous scale, of an entirely different type

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The first Jewish immigrants, the Spanish Jews, began to arrive in 1654. At the time of the American Revolution, practically all American Jews were Spanish Jews. After Waterloo began the immigration of German Jews, which continued until about 1881. There were then about 200,000 Jews in this country. Then began the—

of Judaism from the staid Spanish and the energetic German of the previous generations. It is customary to speak of Israel as a scattered people, as a race that is constantly seeking a home among other nations, as one that really possesses no settled abode of its own. In a sense that is true; but in its larger aspects it is not true at all. For the Jews, as a mass, have inhabited the same territory for at least a thousand years. At the present time there are perhaps 9,000,000 Jews in Europe. Comparatively small numbers are found in all countries—perhaps 100,000 in France, 240,000 in the United Kingdom—despite the ribald accusation that Scotland is no place for the Jews, the record discloses about 27,000 north of the Tweed—15,000 in Belgium, 8,000 in Greece and so on. These are merely the fringes of European Israel; of the 9,000,000 Jews living in Europe, not far from 7,000,000 are congregated as a mass in one rather restricted area.* This territory comprises western Russia, eastern Prussia and northern Austria. One hundred and fifty years ago not a square mile of this region belonged to the three countries named; all of it was part of the ancient Kingdom of Poland. Until the partitions of Poland, in the Eighteenth Century, neither Russia, Prussia, nor Austria had any large number of Jews; their present Jewish populations, that is, are an inheritance from that unholy piece of statecraft. There is thus a certain inaccuracy in referring to Russian and Austrian and Polish Jews; in reality they are all Polish Jews. For some reason which is not perfectly understood the great majority of all the Jews in the world found their way into Poland in the Middle Ages and in that country their descendants have remained until the present time. Here, then, is the present Jewish home—or at least here it was in 1881, but there is one country now which also has a very large Jewish population. That is the United States. In forty years, that is, American Jews have grown in numbers from 200,000 to 3,000,000. And the significant fact is that this growth represents a type of Jew that was hardly known to this country in 1881. Almost all of our American Jews have come from those provinces of Poland which were until recently parts of Russia,

*These statistics are taken from "The Jews," a very valuable work by Dr. Maurice Fishberg, of New York.

Prussia, and Austria. The transplantation of millions of Jews from their mediaeval home in Central Europe—a transplantation which was perhaps not at first deliberate and conscious, but which is becoming increasingly so—forms not only the most startling migration in the history of Israel, but gives the United States its great "Jewish problem." Unless the influx is artificially dammed there is not the slightest question that, in less than a generation, this great mass of central European Jews will have been moved to this country. America will fulfil the rôle which Poland filled in the Middle Ages as the great home of the Jewish race.

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—enormous inroad of eastern European Jews, which now constitute the great mass of America's Jewish population. There are not far from 3,000,000 of them. Their characteristics are radically different from those of the Spanish and German Jews, who made up our Jewish population before the influx from Russia began

It would have been strange if this eastern European Jew did not present such dissimilarities to the type of Jew which had already been domesticated here as to seem almost to belong to an entirely different race. His history had been a deplorable one. Possibly his remote ancestors may have resembled the Spanish Jew or the Jew from Bavaria and the Rhineland, but centuries of separation, in the era when means of communication were all but unknown, had produced a type that had little in common except a common religion. The Polish Jew had lived for centuries among Slavs and physically he had taken on so many Slavic characteristics that there is little doubt that in his veins there flows a considerable amount of Slavic blood—just as in the Spanish Jews there flows a considerable mixture of Spanish blood. The brunette type—the Jew of coal-black eyes and raven hair—is perhaps the most commonly met among the Polish Jews, but there was a considerable proportion of blonds—Jews and Jewesses with the fair hair and the blue and gray eyes that unquestionably indicate a considerable racial mixture with the Slav. Even that feature which is so dear to the cartoonist, the hooked nose, is infrequently found among the so-called Russian Jews; their nose is more commonly retroussé or pug. The hair is not always kinky or curly, but more commonly straight—again a Slavic characteristic. While physically the Eastern Jew frequently resembled the peoples among which he had lived for centuries, and so presented traits which greatly contrasted with his co-religionists already established in this country, mentally and spiritually he is something entirely different.

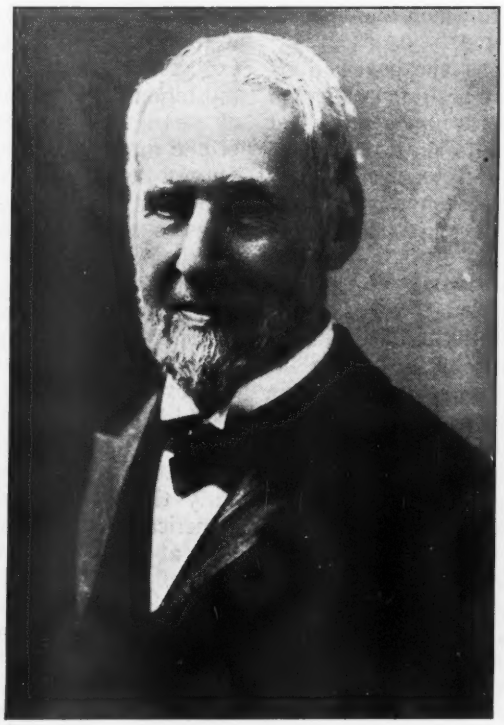
The thing that marked him most conspicuously was his religious orthodoxy. The long unkempt beards, the trailing hair, the little curls about the ears—these carefully preserved stigmata of traditional Israel were merely the outward signs of lives that were lived strictly according to the teachings of rabbinical law. It is perhaps not strange that the Jewish communities already established in this country regarded these strange apparitions as peoples alien to themselves, and, that, although they sympathized with their sufferings and gladly assisted in establishing them in their new environment, they refused to regard them as social equals, abhorred the idea of intermarriage, called them "Polaks" and "hinter Berliners,"—and practised against them, indeed, many of the discriminations which all Jews have for generations suffered at the hands of their Gentile compatriots.

Strange as these Eastern Jews may have seemed in American eyes, their own bewilderment amid this new civilization was even greater. It would probably be impossible to find two states of society more dissimilar than Russia and the United States. These new Jewish immigrants came from a country that was still living in the Middle Ages, for Russia represented a condition of progress that was little removed from, say, England in the Twelfth Century. It must be remembered that up to 1861 serfdom,—a modified form of slavery—had been the social status of the Russian peasant; though a ukase of the Czar had ostensibly made him a free man, his actual condition had little changed; his life was still a squalid and poverty-stricken routine; he was totally illiterate and he lived apparently only to be exploited by the nobility and the government. The graces and decencies of life had never been his portion; he was about as ignorant and stupid a human being as the earth contained. Russia was a great shambling agricultural country; at least 90 per cent. of the population lived on the

THREE GENERATIONS OF JEWISH IMMIGRANTS

America's present Jewish problem is caused by the apparent programme of transferring the great masses of eastern European Jews to the United States. The above are specimens of the 2,500,000 who have reached American soil in the last forty years

farm; agricultural methods were extremely primitive; that industrialism which is the great feature of modern life had made practically no progress. There were virtually only two orders of society; this great sluggish peasantry, ill-fed, ill-housed, purposely kept in ignorance and over burdened with taxes, and above them a small group of exploiting nobles. Thus the environment to which the Russian Jews had been accustomed for many centuries was that of an inferior civilization. And in this Russia, numerous as the Russian Jews were, they had never been anything but aliens. The mediaeval conception of the Jew as a thing apart, as a cursed creature doomed to expiate the crime of the crucifixion by ages of wandering and misery, represented Russian statesmanship as applied to this alien people. The Spanish and Portuguese Jews who reached America in the Seventeenth Century spoke Spanish and Portuguese; the German Jews who came in the Nineteenth Century spoke German; but the Eastern Jews, though they had lived for centuries in Poland and Russia, spoke neither Polish nor Russian, but an outlandish jargon, a combination of German and Hebrew, known as Yiddish. The fact that these people had not acquired as their vernacular the speech of the peoples among which they had sojourned so long, tells their story. In these Russian provinces the Jews had always been an *imperium in imperio*. They were not citizens; they were not a part of the Russian state; they were a separate entity, to a considerable extent being governed by their own laws. The Russian could no more conceive of the Jews being admitted to the rights of citizenship than the Turk could look upon his non-Mohammedan populations as free men entitled to the same privileges as Moslems. The idea of citizenship as developed in Anglo-Saxon countries—the conception that every man, woman, and child has the same rights before the law—was entirely unknown to the half-western, half-Oriental Russian state; the Jews were simply strangers, who really had no right to be living amid Christian peoples and who could justly be controlled by special laws. They paid taxes which their Christian neighbors did not pay; they were prohibited from owning or cultivating the soil; they could not be admitted to schools and universities except under certain restrictions. The Russian code contained more than one thousand articles directed exclusively against the Jews. The most serious were those which restricted his rights of residence. Not only was the Russian Jew compelled to live in cities, but in cities in a certain part of the Empire—the seventeen western provinces which formed the famous Pale of Settlement. He therefore did not possess those indispensable rights of a free man—of selecting the place where one will live and the occupation in which one chooses to engage. If the American Government should take 10,000,000 of its citizens, drive them into the cities of New England, prohibit them from living anywhere else, oblige them to follow certain occupations, forbid them to own land, and heap upon them numerous other restrictions from which the mass of the population was free, we should reproduce a condition which



JOSEPH SELIGMAN
Who began his business career as a peddler and ended it as the head of a large Jewish-American banking house

resembles the fundamental fact in the existence of the Jews in Russia. The over crowding, the squalor, the poverty, the physical misery that resulted from this herding are indescribable; the gaunt and hunted faces, the weary eyes, the hollow chests and the shrivelled frames of the shiploads of human wretchedness that began to land at Castle Garden in the eighties only faintly reflected the hideous restrictions to which these people had so long been subjected.

Despite these limitations, the Jews had attained a definite economic position in Russian society. Russia, as already made clear, had only two social orders—its great impassive peasantry and its nobles. Yet a country with 160,000,000 people, even though most of them are engaged in agriculture, must necessarily stand in need of business men. The Russian masses themselves were too ignorant and too indolent to fulfil this function and the Russian nobles, in accordance with the standards of their caste, regarded "trade" as degrading. Naturally the Jew, with his keen aptitude for business, stepped into the vacant place. For centuries the Jews had thus been the middlemen of Russia. The laws restricting residence did not apply to the merchant class; at all times these laws were constantly evaded; the result was that in every part of Russia trade and commerce were in Jewish hands. They were the shop keepers, large and small, the bankers, the commission men, the grain merchants, the money lenders, the vodka dealers, the tavern and hotel keepers; above all—and this was the occupation that made them especially unpopular with the peasantry—they were the stewards of the nobility, the managers of their estates, the men whose business it was to wring the last copek which the much burdened husbandman could pay as rent. The Jew was the obnoxious person who moved between the manor and the hut, and the fact that he usually farmed the revenue on shares made him an especially rapacious persecutor in the peasants' eyes. His position as liquor seller—and alcoholism was the besetting vice of the mujik —increased the public odium in which he was generally held.

Yet it was only a comparatively small number of Jews who spent their time in business. The favorite accusation of anti-Semitic writers is that the Jew is not a producer, not a worker, but merely the speculator in the wealth produced by other people. The fact is that the great mass of Russian Jews were manual workers. Most of the Russians themselves were tillers of the soil and in the cities of the Pale the great majority of the handicraftsmen were Jews. They were carpenters, house painters, plumbers, glaziers —indeed they worked as artisans in practically every occupation, usually for the most beggarly wages; above all, however, they were workers in the tailoring trades. Several explanations have been furnished for the mysterious attraction which the manufacture of wearing apparel has for the Jew. One of the most plausible is that it is merely a natural development from dealing in second-hand clothing—one of the inferior occupations to which the Jew was reduced by legal restrictions. Another is that the Jew is, compared with the average Gentile, of poor physique, with less muscular power, and that he is therefore better adapted to the needle trades than to more robust occupations. Whatever the explanation, the fact remains that the clothing business in Russia, both on the manufacturing and the merchandizing side, has for generations been a Jewish monopoly. Similarly the great mass of Jewish artisans in America are workers in the clothing trades and this at once emphasizes another respect in which Russian Jewish immigration differs from that which had come from Spain and from Germany. The Spanish Jews were mainly bankers, high class merchants and tradesmen, professional men and scholars; the Germans, when they arrived—though their economic status has vastly improved—were small shopkeepers, peddlers, rag pickers, pawnbrokers; but the Russian Jews were a mighty horde of manual workers, hectic in their industry, remorseless in their competitive zeal.

Yet the motive that first started this great Western exodus was not economic. The Russian Jews were not primarily immigrants looking for jobs; they were rather political refugees. America's present Jewish problem has its origin in a sensational event of the year 1881. The crazy Nihilist who hurled a bomb at Czar Alexander II was the ultimate creator of the New York Ghetto and the man who added 3,000,000 Jews to the American population. For the direct result of that act was to put the reactionary party into power in Russia. The murdered Czar had been liberal in his tendencies; he had emancipated

the serfs, and, at the moment of his assassination, he was about to issue a Russian Constitution. His death ended all that. It caused a national revulsion against everything resembling free institutions—or, as the Russian votaries of autocracy put it, the "rotten parliamentarism of the West." Anything suggesting democracy became anathema in the eyes of these new forces. One of the strangest figures in modern history now became the supreme power in Russia. This was M. Pobiedonostseff, the Procurator of the Holy Synod. Compared to this sharp-featured Russian obscurantist, Bismarck was a democrat and the ex-Kaiser a second edition of Thomas Jefferson. In his philosophy the greatest evil of modern life was the thing usually known as "progress." Popular education, freedom of speech and of the press, religious toleration, representative government—these modern ideas were the inventions of the devil, and, as such, would necessarily bring destruction to Holy Russia. Pobiedonostseff, therefore, set himself to bringing the darkest period of the Middle Ages back to Russia—though most observers believe that Russia had not emerged very far from that period. In his new and purified Russia there were three great pillars—autocracy, Greek orthodoxy, and nationalism, and anything or anybody that interfered with these three great aims was to be ruthlessly destroyed. Naturally one of the most formidable obstacles in his way were the Jews. They were the enemies—or were so regarded—of Russian nationalism—for they were not Russians, and, according to the accepted idea, never could become such; neither were they members of the Greek Orthodox Church, and not likely to be converted. Necessarily any complete Russification of Russia must dispose first of all of the Jews. When asked how he was to get rid of them, Pobiedonostseff replied—at least he is reported as replying, "One third will be converted, one third will be massacred and one third will emigrate." To just what extent the first item in this programme was carried through is not definitely known; the indications are that it was not particularly successful. The persecutions and pogroms which now began all over Russia, and which have continued with only occasional breathing spells up to the present time, represented a sincere effort to make good on the second detail. These onslaughts on the Jews were indeed of an atrocious character. Whatever the Russian masses may have thought of the governmental programme as a whole, there is no doubt that its anti-Jewish activities were popular, for the sons of Israel were everywhere detested. The earliest manifestations took the form of expulsions from other parts of Russia into the Pale of Settlement. The residential laws had largely fallen into abeyance during the mild rule of Alexander II, and thousands of Jews were illegally living in prohibited areas. The May laws of 1881 required all these unfortunates to pull up stakes and withdraw to the Pale, and, when they did not move fast enough, the Cossacks fell upon them and drove them from their homes with every conceivable form of brutality.

These expulsions and these massacres had another purpose—and one which was chiefly interesting to the United States. When the Jews protested against these proceedings to Count Ignatieff, the author of the May laws, he made this laconic answer: "The Western borders are open to you Jews." Up to this time Russia had had vigorous laws prohibiting emigration; but now she began to relax these laws. One privilege was extended to the Jews that was withheld from all other denizens of the Czar's dominion: they were not only permitted but invited to leave the country. Such was the original impetus of the movement that, in forty years, increased the Jewish population of the United States from 200,000 to 3,000,000.

A second article, to be published in January, will describe the accomplishments of Jews in American life, and especially consider the question as to what extent they are becoming the "dominant" forces in American business, professions, and finance

Science Remaking Everyday Life

II.

COLD ALMOST AS USEFUL AS HEAT

The Second of a Series of Articles Calling Attention to the Sociological Effects of Modern Inventions. Feats of Science That Have Changed Human Life More Than Wars and Rulers Have Changed It

By EDWIN E. SLOSSON
Science Service, Washington, D. C.

THE invention of artificial heat was made so far back in the life of the human race that we must pass beyond history into mythology before we can find any account of its origin. Prometheus is credited with having brought down fire from heaven, but we will rather believe it was made on earth, and by no superman, but by some prehistoric savage so low in the scale that we would hesitate to call him human.

The invention of artificial cold was made so recently that we have only begun to utilize it within the memory of all of us.

This curious delay in the discovery of cold and the consequent crippling of man's ability passed naturally unnoticed by the majority of mankind but attracted the attention of Lord Bacon who commented upon it in his Sylva Sylvarum as follows:

"Heat and cold are nature's two hands whereby she chiefly worketh, and heat we have in readiness in respect of the fire, but for cold we must stay till it cometh or seek it in deep caves or high mountains, and when all is done we cannot obtain it in any great degree, for furnaces of fire are far hotter than a summer's sun, but vaults and hills are not much colder than a winter' frost."

Bacon pointed out what a useful thing it would be if man could have the same command of cold as he has of heat and like a true scientist he undertook experiments into its possibilities. But unfortunately this attempt to put his philosophy into practice led to fatal results. He caught his death of cold by descending from his carriage one winter day and stuffing snow into a dressed chicken to see if it would keep.

Cold storage is now so common that we can hardly realize how slow men were to avail themselves even of the meager means of refrigeration that nature affords in the form of snow and ice for the preservation of food. "Make hay while the sun shines" is an old adage but the opposite obligation to "make ice while the pond is frozen" was first carried out on a large scale in our own land and in the last century. The Englishman combines an undue fondness for the external application of cold water with a confirmed prejudice to its internal application. Visitors from the Old World are still surprised to find that in this country ice is classed by poor and rich among the necessities of life, instead of among its luxuries. But American tourists and soldiers have carried abroad the love of ice cream and ice water and these are gradually sweeping over the continent of Europe like another glacial age.

The century of scientific effort to extend the range of temperature under man's control has given him what Bacon called "Nature's two hands whereby she chiefly worketh." On the one hand we can now produce in the laboratory almost as high a temperature as the hottest stars, some 20,000 degrees Centigrade, at which the very atoms break up into smaller fragments. On the other hand we have approached to within two or three degrees of absolute zero, which is 273 degrees Centigrade below the melting point of ice.

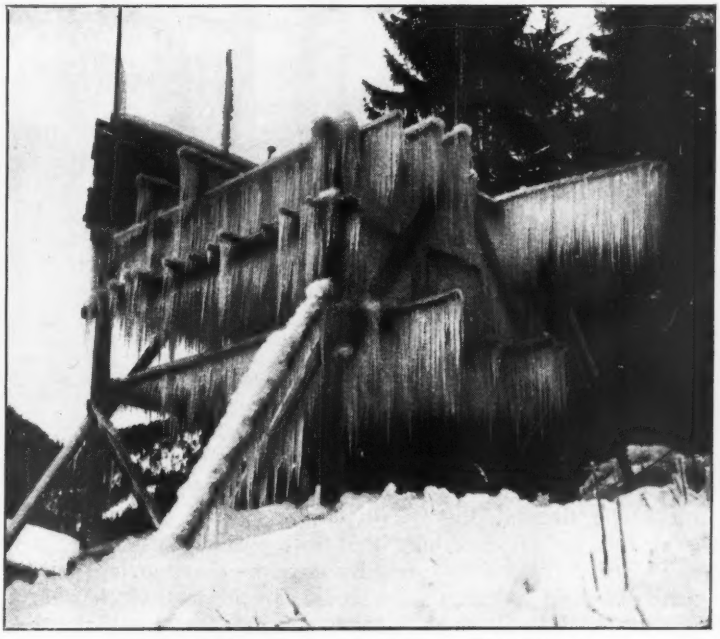
For there is this important distinction between heat and cold. There seems to be no top to temperature or if there is we are not in sight of it. But there is a bottom to temperature and we have practically reached it in the laboratory.

The average temperature of the universe is not far above absolute zero. For though stars are intensely hot, they are few and far between compared with the immensity of empty space wherein there is, properly speaking, no heat. Cold is the rule in the universe as a whole. Heat is the local and temporal exception. Our warm little world, blanketed by its atmosphere and turned as on a spit to the sun's rays every day, is as lonesome as a lost explorer on an Arctic ice-sheet.

The history of a solar system like ours seems to be something like this. In the beginning the dark and isolated atoms are dispersed in frigid space. Ultimately these draw near to one another and find in union strength. Their combined energies blaze up in gigantic cyclones of flaming gas which casts its beams lavishly in all directions for many millions of years. But this is a mere moment as measured by God's chronometer and soon the stellar flare dies like a bonfire of straw. The prodigal rays never return to their birthplace. The planets cool down one by one, and by and by the central furnace of the sun banks its fires for the eternal night. The planets snuggle close to the mother sun to revive the warmth but this only briefly retards the inevitable refrigeration. Matter losing its vital energy becomes lifeless, perhaps we may venture to say that the energy of motion may be itself transformed into inert matter, and ultimately the congelation of the constellation is complete. The universe then has reached its nadir, the changeless nirvana toward which all activity tends.

The chronicle of the century of effort to approach the farthest north of temperature, absolute zero, is as fascinating as the contemporary struggle to reach the geographic pole and unlike the latter has proved profitable at every stage. When Fahrenheit in 1714 stuck his mercury thermometer into a mixture of salt and snow he thought he had reached the lowest possible point and boldly scratched a 0 on the glass tube. But it was not long before scientists began to climb down the minus steps. In 1759 a Russian professor, taking advantage of a cold spell, froze mercury itself in a mixture of snow and nitric acid.

A hundred years ago (1823) Faraday, working in the Royal Institution of London, succeeded in condensing ammonia gas to a liquid by combining cold and pressure. When the pressure was removed the liquid of course boiled off rapidly as a gas again. Since the process of vaporization absorbs heat the liquid that was left got colder and colder the faster it boiled. This discovery proved of the greatest importance, both practically and theoretically. Liquid ammonia was used by Carré in 1850 in his ice-making machine and is today the main means of refrigeration. Faraday's discovery also opened the way to the liquefaction of all the other gases, for when one gas is liquefied and boiled off in a vacuum the cold so produced may be used to condense



MAKING ICE IN THE BAVARIAN MOUNTAINS

A crude but effective method of producing ice. Water is pumped in small quantities over a framework of logs, forming long icicles, which, as the water continues to run over them, consolidate themselves into irregular sheets of ice. When the framework has collected all the ice it can hold the water is turned off and the ice is sawed from the logs and stored

a still more obstinate gas and so on, till the last has been brought into the liquid state.

In 1835 Thilorier liquefied carbonic acid gas and when part of this had boiled off the rest got so cold that it froze to carbonic acid snow. The centenary of this discovery should be celebrated in America, for nowadays every drugstore has a cylinder of liquefied carbonic acid underneath the soda fountain to supply the fizz for our national beverage.

By means of the cold produced by boiling liquefied ethylene, air was reduced to the liquefying point. By boiling off liquid air in a vacuum hydrogen was liquefied. And finally in 1909 the boiling of liquid hydrogen reduced to a liquid state the most refractory of all gases, helium. By boiling off helium it is possible to get down to about two degrees of centigrade of absolute zero.

In his work on the liquefaction of hydrogen, Professor Dewar of the Royal Institution found it necessary to devise some way of keeping the heat of the air out of the flasks containing liquid air. Every metal is a good conductor of heat. Glass is a poor conductor but not impenetrable. Even layers of felt could not protect the flasks. But finally Professor Dewar thought of something that will not convey heat. This is *nothing*. By enveloping his flasks in a vacuum he could keep liquid air for days although it might be 400 degrees Fahrenheit below the temperature of the room. He sealed one flask inside another and exhausted the air from between the two. If as a further precaution the flask is silvered on the inside so as to reflect rays of light instead of absorbing them not more than three percent of the heat will leak in. This ingenious piece of scientific apparatus was quickly seized upon by American manufacturers and is now in common use for keeping our beverages hot or cold. It works either way.

BUTTER IN COLD STORAGE

Many of our foods, these days, come in contact, some place along the route they travel, with refrigeration. Dairy products, especially, require refrigeration, which has made possible the supplying of cities with milk from farms hundreds of miles distant

The principle of mechanical refrigeration is easy to understand, although the application of it is a special branch of engineering. As everybody knows, heat expands and cold contracts. Or, putting the same idea in different language, when a gas is forced to contract by pressure it gives off heat to its surroundings and when a gas is allowed to expand it takes up heat from its surroundings and so cools them off. To expand a liquid into a gas, occupying say a thousand times as much space, requires a great deal of heat, more than merely expanding a gas. If a gas is compressed, especially if it is compressed to a liquid state, and its surplus heat removed, and then the pressure is relieved so that the gas can expand again into the vacuum above, it will in so doing absorb heat from whatever is in contact with the containing vessel. Any gas, air for instance, can so be made to cool itself and other things. Various gases are used in refrigerating machines nowadays, ammonia, sulfur dioxide, carbon dioxide, methyl chloride, and ether, but ammonia is most common because it can be readily reduced by a pressure pump to a liquid—not the ordinary "liquid ammonia" that you buy in bottles for cleaning, for that is merely ammonia gas dissolved in water, but the dry gas itself reduced to a liquid by compression.

The visitor to the rotunda of the Capitol at Washington, where each of the states has set up statues of its most distinguished citizens, is surprised to find that Florida instead of choosing a pioneer, politician or military man, as most of the states do, has erected a memorial to "John Gorrie, M. D., Inventor of the Ice Machine and Mechanical Refrigeration." Too many men of various countries have contributed to the gradual development of mechanical refrigeration for any one person to be entitled to exclusive credit for the invention, but Dr. Gorrie better deserves his place in this national hall of fame than most of his associates of the rotunda for his service to the country when he took out the first American patent in 1850 for a practical process of making artificial ice. This he did by compressing air to two atmospheres and, after cooling it with water, allowing it to expand to normal pressure in a cylinder of brine which was thereby cooled enough to freeze water. But this was a wasteful process and seven years later Sir William Siemens suggested a necessary improvement; that the cooled air, instead of being allowed to escape, should be used to cool the fresh air to be compressed. This is the "regenerative principle" that has finally led to liquefaction of all the gases.

The liquefaction of gases by the regenerative system of refrigeration, which was accomplished on a commercial scale since the beginning of the present century, had as its first effect the upsetting of the balance of military power throughout the world. By providing an unlimited supply of nitrates for high explosives it made the Great War possible. Without such a supply Germany might never have undertaken it. Without such a supply the Allies might never have subdued Germany.

The future effect of this discovery will be to make fertile the waste places of the earth, to permit the increase of population, to prevent starvation and to extend the life of civilization.

Nature has been capricious in her distribution of mineral wealth. She has given South Africa diamonds but not coal, and to North America coal but not diamonds. But in one respect Nature has been strictly impartial. She has given to every land nitrogen and oxygen in exact proportion to its area; the same amount per square mile without

"MAKE HAY WHILE THE SUN SHINES"

Is an old adage, but the opposite obligation to "make ice while the pond is frozen" was first carried out on a large scale in our own land and in the last century

regard to population or climate. This is fortunate, for both these elements are essential for all life, vegetable and animal.

But there is one important difference in our utilization of the two. Oxygen can be got by simple inhalation; we animals through our noses, the plants through their stomata. But nitrogen although it constitutes four-fifths of the air is not available to either animals or the higher plants in this free form. It must first be fixed in form of ammonia or nitrates before it can be used by the plants and fixed in the form of protein by the plants before it can be used by animals. Fortunately the nitrogen so captured can be used over and over again by plants and animals in turn if it is not wasted, but to increase our crops or to provide gunpowder we must have some larger supply than what is slowly furnished by the bacteria attached to clover roots or by an occasional stroke of lightning.

There are big beds of nitrate in Chile but during the war the British fleet stood between Germany and Chile. So the Germans made nitrates out of their home air by means of a sort of artificial lightning or that convenient combiner of elements called a catalyst, using refrigeration to get their gases pure. In the Haber process hydrogen is obtained from coal gas by freezing out the rest of the gases by liquefaction. Nitrogen is obtained by liquefying air, and then relieving the pressure, when the nitrogen boils off first and leaves the oxygen. The nitrogen and the hydrogen, brought together under heat and high pressure in the presence of the catalyst, unite to form ammonia and this may, by a similar reaction with oxygen, form nitric acid or nitrates. The German factories at Oppau and Leuna are now turning out 300,000 tons of fixed nitrogen a year, so Germany is not only independent of Chilean saltpeter for her own crops but has fertilizer to export. Last year the nitrogen fixation works at Oppau were blown up with great loss of life by the explosion of a large store of ammonium nitrate and sulfate prepared for fertilizer. We need have no fear of any such catastrophe in the United States. We have no factory of the sort to blow up. Muscle Shoals is not working.

It might be supposed that researches on the liquefaction of rare gases could not possibly have any practical application. But you never can tell when a bit of scientific information is going to come handy. Within five years there arose an emergency when helium, hitherto a mere chemical curiosity, became an object of extreme interest and might have decided the fate of the world.

When the war broke out the Germans had a weapon that no other power possessed, the Zeppelins. These giant dirigibles, propelled by gasoline, could fly over sea by day or night and hovering above a city at an unapproachable height drop bombs upon it with impunity. London could thus be bombarded from the Rhine. But the Zeppelin had one vulnerable point, one fatal defect. The hydrogen with which it was filled is inflammable. When mixed with air it is explosive at a spark. An incendiary bullet piercing the silk gasbag might set the whole on fire and bring airship and crew blazing down like a falling star. So the Zeppelins that swept over England in the dark were mostly destroyed before they had done much damage.

The airships of the Allies had the same weakness but when America came into the war a way of overcoming the difficulty was discovered. For certain gas wells in Texas give off helium in larger quantity than is known to exist anywhere else in the world. Now helium is the next lightest gas to hydrogen. It has nine-tenths the lifting power and it is non-inflammable. By freezing out the rest of the gases coming from the wells enough helium had been secretly prepared to fill a balloon by the time the war came to an end and the precipitate collapse of Germany rendered its use unnecessary.

But that helium is safely stored away in tanks and so long as we have it, and until some other nations find an equal supply, the United States has the advantage of all other powers in the air. As a gentle reminder of this unique and mighty weapon a dirigible filled with helium, the first and only one in the world, sailed over Washington last year while the Conference on the Limitation of Armament was in session. The ZR-2 that we were to buy from England blew up on her trial trip. Our own airship, the Roma, suffered the same fate, also with great loss of life, and last October the C-2 burned up. These were filled with hydrogen but if they had held helium instead they would never have been destroyed.

Man has finally made himself at home in all parts of his planetary habitation. But it has been difficult for him to adapt himself to extreme climates because of an unfortunate

combination of personal peculiarities. Man has a constant temperature inside and a thin skin outside. He must stick to the blood heat of 98.6 degrees internally whether the air externally is 110 degrees above zero as it may be in Arizona or 60 degrees below zero as it may be in Alaska. A variation of half a dozen degrees above or below the normal in his internal temperature is likely to prove fatal to him.

When the air is colder than he wants, man can put on clothing and warm himself with his own internal heating apparatus. When the air is warmer than he wants, man takes off clothing—or should if he were as sensible as a savage. But if the atmospheric temperature is 99 or over that is not enough, for he has no internal refrigerating apparatus and his heating apparatus runs all the time whether he needs it or not. So he gets rid of his surplus heat as best he can by exuding water from his pores and letting it evaporate. If it does not evaporate fast enough to get the cooling effect, he facilitates it with a fan, preferably electric, for then he is not heating himself in the effort to cool himself off. In tropical climates like India it is customary to hire a native to pull a punka over the bed all night. But this is merely relieving the heat of the master by imposing it upon the servant. There is no net gain, but rather a loss, if we consider all flesh as one. So, too, is the custom in tropical countries of setting a native to run an ice-machine by a treadmill, equally a waste of human energy. Science, which aims to solve the labor question by eliminating labor, sets an engine at making ice and so releases the poor native from his treadmill.

But observe that it requires heat to produce cold, that is, energy must be expended in pumping out the heat from the water that is to be frozen. In the ordinary American ice-plant one ton of coal will make 7 to 8 tons of ice. But in some of the best British plants, using the Linde process, 15 and even 18 tons of ice are made by the burning of each ton of coal. The ice machine gives us ice in any quantity at any time and free from germs and dirt. It has made fever a rare disease in some places.

Thanks to the invention of the refrigerating

FRUIT FOR SALE AMONG THE POOR

Refrigeration makes possible the sale at low prices of fruits grown thousands of miles away. As a matter of fact fruits that would never be known to the untraveled multitude are as common as fruits of local origin

THE CHICAGO—
Without refrigeration the enormous business of meat—this great centre is sent to almost all parts of the world,—refrigerator ships can be served in Chinese or African—

machine ice can be had any time and anywhere that power is to be had. It may be water power, that produces the active energy that takes the latent energy from the water and reduces it to solid form. Previously ice was a luxury peculiar to the temperate zone. The temperate zone is so-called because the weather is intemperate, not equable as in the tropic and frigid zones. The packing of ice in winter for use in summer was a method of equalizing the inequalities of the season. What the world needs now is some inventor who will show how the heat of summer can be stored up to relieve the cold of winter.

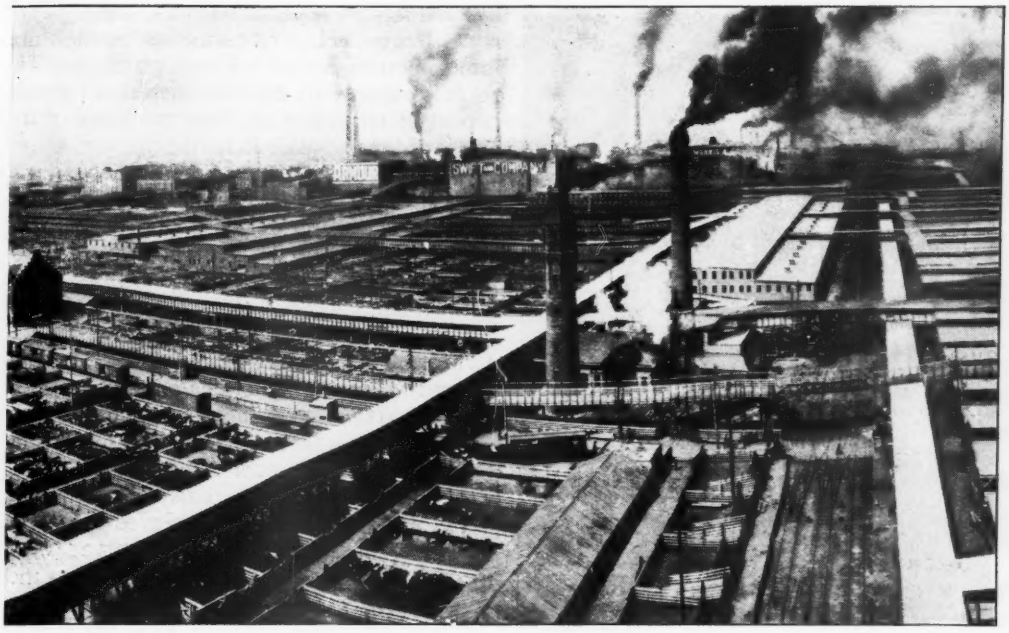
Long distance feeding and long time preservation of food has become possible by discovering why food spoils. This discovery we owe to Pasteur whose centenary is celebrated this December. He was a chemist who pursuing a purely chemical line of investigation found himself over in the field of biology, for the distinctions between the sciences considered so important in universities, are purely artificial and imaginary. Pasteur found that the cause of putrefaction was always the growth of some microscopic plant or animal. To overcome them and outwit them is then part of man's fight in self defense against infusoria. These, the lowest forms of life, are the most deadly enemies of the highest, man. They were the sole possessors of the earth for untold millenia before the advent of the higher organisms and they wage incessant warfare against all of these later comers. Possibly they may win in the end and live on earth as many hundreds of thousands of years after man has succumbed as they did before his arrival, but meantime we will do the best we can to keep them from murdering us and spoiling our food.

Now that we know their habits of life we are learning how to circumvent them. These microscopic plants and animals require for life moisture and heat. Let us list all the ways by which we might prevent them from eating up our food before we get it.

1. Kill them off. This may be done by cooking.

2. Keep them out. This may be done by canning.

3. Poison them. That is, put in something that will prevent the growth of bacteria of putrefaction but not be injurious to us. The oldest and most commonly used of such chemicals is sodium chloride. Other preservatives are mostly aromatics, either applied in a crude form as smoke or in modern usage as purified coal tar compounds.



—STOCKYARDS
—packing could never have grown up. Meat packed at
—and because of refrigerators, refrigerator cars, and
—or European hotels as advantageously as in Chicago

4. Remove the moisture, as may be done by drying, dessicating or dehydrating. This reduces vegetables to 1-10 their weight, but impairs texture and taste.

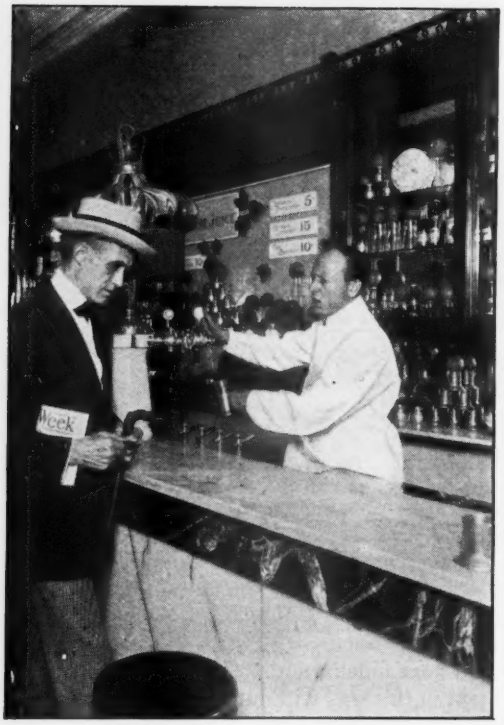
5. Deprive the foods of heat. This does not take anything away, like drying, or change composition, like cooking, or add anything, like antiseptics. It temporarily puts a stop to the activities of the bacteria and when the food is allowed to come back to ordinary temperature, weeks or months or years later, it is practically restored to its primary condition.

It is not denied that the packers and commission merchants and cold storage men have in many instances taken advantage of the occasion to get more than their fair share of the advance in prices, but there is danger lest the popular prejudice against them should hamper one of the most useful of modern industries.

Cold storage was not devised by the capitalist under the inspiration of the devil for the purpose of simultaneously starving, cheating, and poisoning the poor, as some recent writers would have us believe. The natural effect of cold storage is to equalize prices by enabling perishable foods to be transported anywhere and kept indefinitely. How long food can be kept in this way without spoiling is not known and probably we can never find out. The longest on record is some mammoth meat which was packed away in Siberian ice about the time when the human race began to stand up and lose its hairy hide. This was before there was any law requiring meat in cold storage to be tagged with its date so we have no means of telling how long ago it was, but if we say 100,000 years no one can successfully contradict us. At any rate, when the mammoth thawed out it was sufficiently well preserved to be eaten by dogs and Yakuts. Doubtless our palate would have been more critical than theirs but since mankind has long forgotten the taste of mammoth meat no one could say that its flavor had been impaired.

In short it is not to be disputed that cold is almost a perfect preservative. Seeds and microbes have been chilled to the temperature of liquid air without even destroying their vitality, so there is no reason to think that a more moderate degree of cold, however long continued, would make flesh or vegetable inedible.

The first ice house in the United States was built in 1805. The use of ice in storage gradually grew but it was not until 1867 that the first iced car loaded with beef was run through



AN AMERICAN INSTITUTION: THE SODA FOUNTAIN

In forty years the soda fountain has become a fixture in every American community. Ice cream and the innumerable array of iced soft drinks that are sold over these marble and nickel-plated counters have long since secured an unbreakable hold on the American public

from Chicago to New York. Ten years later it became a common thing, for it was found cheaper to ship dressed beef in refrigerator cars from Chicago to Boston than the live-stock. That this was a humanitarian reform as well as a financial advantage will be realized by those of us who are old enough to remember witnessing the misery of the cattle packed in the cars on the long journey, jammed and jolted, often without water for days.

In 1879 canning came in and these two processes for preserving and transportation established the large packing houses in the agricultural centres where the stock could be fattened.

Chicago stock yards have handled in one year more than 18,000,000 head, of which 3,500,000 were cattle, 750,000 calves, 8,700,000 hogs, 5,200,000 sheep; total value nearly a billion dollars. Some 400 meat products and by-products are now made from animals. The bones, horns, hair, and refuse are worked up into something useful. Every gland may be made to supply its peculiar secretion for the benefit of those humans who are short of it. In the old-fashioned butchering many of these by-products were lost and no such sanitary supervision could be exercised as is now possible in the large centralized establishments.

The shipping of refrigerated beef owes its initiative largely to the persistence of a Frenchman, Charles Tellier, who devoted his life to the utilization of cold in spite of all sorts of rebuffs, including poverty and imprisonment. Finally in 1876 he equipped a ship, the *Frigorifique*, to bring Argentine meat to France. On its first voyage out it conveyed a stock of beef and mutton to Buenos Aires, something like carrying coals to Newcastle. On its arrival a banquet was served which included a Chauteaubriand steak served with fresh truffles that had been 55 days on the voyage. "Hurrah for the revolutions of science and capital," said *La Liberte* of Argentina, "A new day has dawned for Buenos Aires." So it had, for the cattlemen from up-country came down to the capital with their pockets full of money and spent it with the lavishness of an early oil king. Australia and New Zealand shared the prosperity of the Argentine. Formerly these countries could get from their cattle only hides, tallow, and beef-extract, for these alone would stand transportation. From their sheep they could ship only the wool. But in the cooled chambers of the new steamers mutton and beef, cheese and butter, could be shipped. Australia, which had been overrun by rabbits that had been introduced for hunting but multiplied too rapidly to be hunted out, found a way to make a profit from the pests by sending them to England in cold storage. New Zealand gets about $300,000 a year from the frozen rabbits shipped to the mother country. "The rich and well-to-do eat British beef and mutton, the poor get theirs from Argentina and New Zealand" says Newbigin in "Man and His Conquest of Nature." But that means that the poor of England would not be eating beef and mutton if it were not for the cooled steamships.

Before the war (1912) England imported 643,000 tons of beef and mutton a year. London has cold storage for a million carcasses at a time. It was because England could thus

get her food from the antipodes that she was able to increase her population while the cultivated area in the home islands decreased. It was also because of this that England came near being starved into surrender when the submarines sunk her shipping faster than she could build.

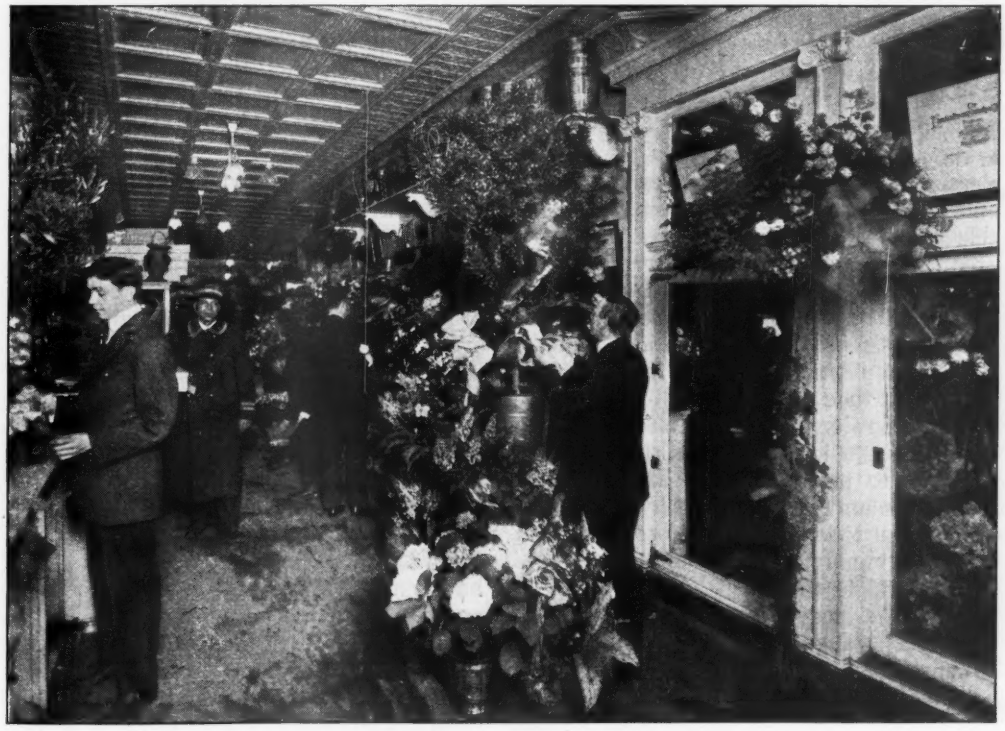
But we cut down a bit on our beef at Hoover's instigation and managed to get enough over there to supply the armies with fresh meat in the field, something never done before. Refrigeration won the war.

Another great saving and addition to our dietary is in the matter of fish. The land of the world has now all been taken up and much of it well utilized. But the sea, which might supply us with immense quantities of food, has only begun to be developed since the invention of refrigeration. Formerly inlanders could only get sea food dried or canned, now they can get it practically as good and almost as cheap as those living on the coast. Formerly fish were wasted in immense amounts, often half a catch or all of it thrown away because it was too late for market or had spoiled. Now it is frozen and saved. Trawlers propelled by gasoline motors stay out a month or more and keep all they catch in cold storage.

Eggs offer peculiar difficulties in preservation because they so easily lose their balance and show it in such an unpleasant manner when they do go wrong. Yet here refrigeration triumphs, for eggs can be preserved for six months or a year without losing their good character, although they may lose their reputation if the fact leaks out. Last April, 320,000,000 eggs were laid in cold storage,—I mean, were lying in cold storage in the United States. Besides these eggs in the shell, there were some 10,000,000 pounds of frozen eggs stored up to carry us through the summer. Russia used to export 4 billion eggs a year before the war, mostly to England.

Last year 11,308,000 fresh eggs came to the United States from China, besides millions of pounds of frozen and dried eggs of Chinese extraction.

Although the French did much to develop



ICE IN THE FLORIST'S SHOP

Cut flowers, without refrigeration, would be far less permanent than they are. As it is flowers can be shipped half way round the world, spending months on the way, and arriving can be taken from the ice as delicately beautiful as when they were cut from their roots

refrigeration on the start, they had not used it for their own needs because the agricultural interests acting through the government had held back importations. The success of the Americans in handling perishables on a large scale in France opened the eyes of the French to the possibilities of the process. So since the war the French Government has changed its policy and is now drawing largely upon Tunis, Algeria, Senegal, and Madagascar for its food. France now imports some 300,000 tons of meat a year from her colonies and Brazil.

It is obvious that when a mother country becomes dependent upon a dependency for her daily food that their rôles will be reversed. It is then the mother country that should be called the dependency. Australia would not starve if cut off from the rest of the world. England would. What the political effects of this changed relationship will be remains to be seen.

What this all means is that man is making a climate to suit him in all parts of the world. The old saying, "Everybody complains about the weather but nobody ever does anything about it" no longer holds good. Somebody is doing something about it. We can now have the weather indoors just what we want it wherever we may be. We can build a house at the poles or equator, an entire town if you please, in which the temperature and the humidity may be kept at the most comfortable point the year round or varied as desired. Man has altogether freed himself from dependence upon nature in regard to meteorological conditions in such circumstances. Taking also into consideration the power of rapid transportation from one latitude or altitude to another, all parts of the earth can now be made habitable to any race.

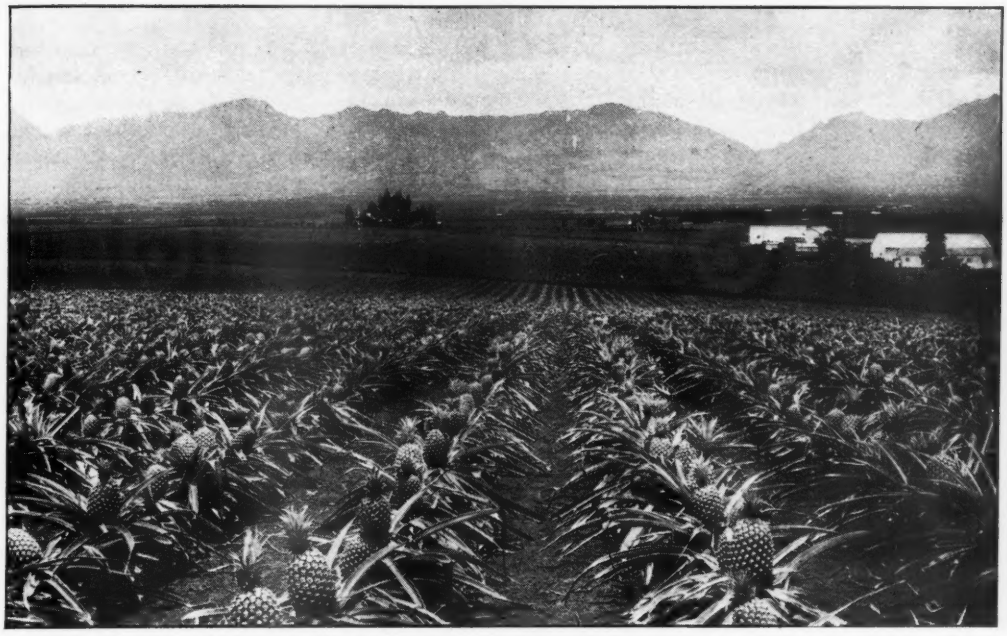
Dieticians tell us nowadays that it is not sufficient to provide in our daily fare the proper amount of fats, carbohydrates, and protein, but that we must also see to it that we have minute amounts of certain substances which they call vitamins. These vitamins are dietary mavericks. They have never been caught and branded. For lack of names they go by letters, A, B, C, D, and nobody knows how far down the alphabet they will reach in time. But it is known that they are in various ways necessary for health and growth and that they are found most abundantly in milk, eggs, fruit, and leafy vegetables. Now these are the very things that commercial refrigeration has added to our daily dietary all the year round. What that means for the vitality of the northern nations cannot be computed.

What it means for the southern communities growing the fruits and vegetables for northern markets we may see for ourselves. Compare, for instance, in life and resulting habit of mind, a man in California living off of an orange orchard of a few acres with a sheep man in Wyoming using a 10,000 acre grazing ground that he may not even own. To get unblemished fruit to a distant market requires united action, efficient organization and scientific knowledge of such things as insect enemies, fertilizers, and meteorology. This leads to coöperative packing, grading, standardizing, advertising, and shipping—and compulsory conformity to community control. A sociologist should be able to tell in advance what would in the course of a generation or two be the character of such a community; what would be the politics, morals, architecture, religion, and literary taste of its population.

Dairying used to be confined to cool climates but now by the aid of refrigeration can be carried on in the south. It is a high class industry, requiring for its success considerable knowledge of chemistry, bacteriology, feeding, and mechanics. Two centrifugal machines, the De Laval separator and the Babcock milk tester, have brought dairying within the sphere of the applied sciences.

Some eighteen pounds of butter are now consumed per capita in the United States every year. This is mostly made possible by the employment of artificial refrigeration in manufacture or storage or transportation. It is cheaper than ice in most creameries. Butter is 98 per cent. digestible and has the advantage over vegetable and meat fats in that it contains vitamin A.

Fresh milk contains all three vitamins, A, B, C, and perhaps others of which a small but continuous supply is essential for health and growth. It is hence advisable to include milk in everybody's daily dietary, but this was impossible, except in rural districts, until the discovery of refrigeration. Now fresh milk is brought into the city of New York daily from a distance of four hundred miles about. Auto trucks run by gasoline collect the milk from the farms and distri-



A HAWAIIAN PINEAPPLE FIELD

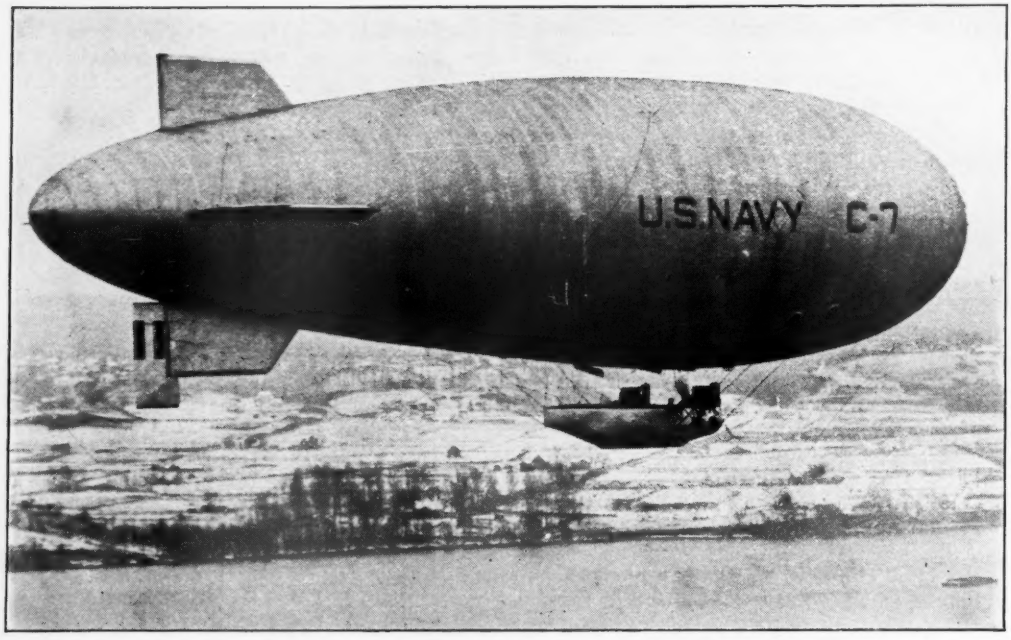
These pineapples will find their way to many corners of the earth. Fresh Hawaiian pineapples are sold alongside fruit from many other parts of the world in city markets everywhere. Refrigeration has made possible the supply of tropical fruits in cities of the temperate zone, and even in parts of the Arctic oranges and bananas can occasionally be bought

bute it to the city homes. In cities comprising one-third of the population of the United States the average person gets 0.668 of a pint of milk daily, besides 0.167 of a pint of cream.

The use of milk is rapidly gaining throughout the nation. In 1921 the milk production of the United States rose to nearly one hundred billion pounds, which is about 107 gallons per capita. In the preceding year it was about 89 billion pounds or one hundred gallons per capita. Some five billion pounds more milk was used for household purposes in 1921 than in 1920. What that means for child welfare cannot be estimated.

Ice cream has become an important factor in our national dietary because it is not merely a means of keeping cool but is also a highly nutritious food. The American custom of heated rooms makes ice cream palatable all the year round and it has become an established conclusion of the dinner as well as a 'tween meal delight. New York City consumes every year eleven million gallons of ice cream. The total amount manufactured for the whole country is more than ten times that, without counting what is made at home and by small retailers. The invention of a new form of ice cream, chocolate coated, is said to have brought in more than a million dollars the first year.

How the dietary of a people can be changed by modern transportation methods is shown by the banana industry. In 1870, Captain Baker, coming back from Jamaica on his schooner, brought to Boston a few bunches of bananas as curiosities. They attracted the attention of A. W. Preston, a fruit dealer of Boston, who in 1885 started with an investment of $2,000 the enterprise that became the United Fruit Company which now runs a fleet of about a hundred steamers to the Caribbean and owns large plantations on the islands and in Central America. These localities have been transformed from a sanitary and industrial standpoint and supply us with some 50,000,000 bunches of bananas a year, half a bunch, or 72 bananas, for every one of us. The bananas are picked green and delivered at various points of the United States in such a state as to ripen within two days from arrival. All the bananas have to be eaten within three weeks from the time of picking in the West Indies.



A NAVY DIRIGIBLE FILLED WITH HELIUM

Hydrogen is the gas that has been used most largely in dirigibles, but it is highly inflammable, and is consequently dangerous. Helium, on the other hand, has 90 per cent. of the lifting power of hydrogen, and in addition is non-inflammable. The United States is the only nation with a supply of helium, and while we have a practical monopoly of it, there is hardly more on hand than is required to fill this dirigible. Helium is secured by a process of refrigeration

What refrigeration has done for the flower business we can see in any florist's window. The sunny slopes of southern France, where blossoms acquire more perfume than elsewhere, send out nightly trains of cut flowers to adorn tables and bodices in the cities of northern Europe. Of late so many bunches of violets have been shipped away from Grasse that the perfumers have to resort to the synthetic scent, ionone, because the supply of the natural perfume has run low.

A flower's season of scent is short and formerly much of this most costly essence was lost because the blossoms could not be picked and extracted at the moment when they were richest in odor. Thus many a flower wasted its sweetness on the southern air. But now the flowers are picked at the best time and laid away in cold storage until they can be worked up. They are packed in cold grease which absorbs the perfume. This pomade is then extracted with gasoline and the solution cooled and filtered to free it from the surplus fats and resins. Afterward the solvent is distilled off in a vacuum so that the delicate odor may not be destroyed by heat. Peonies are now shipped to France from China in large quantities and arrive unimpaired although they have been three months on the voyage, for they have been kept at the freezing point.

By having cold as well as heat at his command, man is able to slow up or accelerate the rate of living in both the vegetable and the animal world. Silk cocoons are now kept in cold storage until the mulberry is in leaf so the worms can be fed. Pieces of living flesh have been preserved in the cold for ten years and completely renewed a thousand times by feeding with nutritive solution.

It is impossible to trace out completely the infinite ramifications of such an invention as refrigeration. I can only mention a few and leave the reader to follow in imagination their direct and indirect effects upon his daily life. For instance, paraffin is obtained from petroleum by cooling when the paraffin crystallizes out and is filtered off under pressure. How many are the uses of paraffin? For one thing what a difference it has made in the home preserving of fruit by sealing the jars and in turn what does that mean in the en-

richment of the dietary and in the saving of fruit otherwise and formerly wasted.

Ammonia refrigerating machines that work automatically—or are supposed to—have been adapted to the family ice chest and this means less spoiled food and more vitamins.

In the making of viscose, cotton is dissolved in caustic soda and carbon disulfide and the solution kept at the temperature of ice water for a month or two so that it may ripen. Such "artificial silk" takes up the aniline dyes better than the natural and has put more color into modern life in the form of sweaters, neckties, and stockings.

Refrigeration is almost indispensable in the manufacture of chocolate, rubber, glue, dynamite, and photographic plates. What a difference it would make if any one of these things were dropped out of modern civilization.

Another minor application but with considerable consequences. If air is cooled before it is sent into the blast furnace the moisture is eliminated. The dry air is then heated and sent into the blast. In this way a great saving of fuel is effected. This means cheaper steel and the extension of its uses. Possibly in the future the air may be liquefied and the nitrogen used for fertilizer and the oxygen used for the furnace. This would produce a greater heat and cut down the familiar tall tower.

In mining there are two great obstacles; water runs in from porous strata and the heat gets higher as the shaft goes deeper until it becomes unbearable. In overcoming both these difficulties refrigeration can help. By freezing the surrounding soil or sand, shafts may be sunk through water-bearing strata (Poetsch Process) and by supplying cool dry air to the miners much greater depths can be reached. Now the deeper we can go the more metal we may get. Most of the metals in the surface layers of the earth have taken up oxygen from the air and it is difficult and expensive to free them from it. But it seems likely that the interior of the earth is largely solid metal, possibly iron, which is rarely found free in the crust, for the earth as a whole is more than twice as heavy as the average of the rocks we know. But whether or not there are metals within reach, we know that there is unlimited heat and engineers are seriously considering the project of sinking a shaft deep enough to boil the water run down into it and then bringing it up in the form of steam for use in engines or heating houses. Thus our power of using cold may become the means of getting heat, and what Bacon called "Nature's two hands" may help one another. But I intended to confine myself to present accomplishments and not consider future possibilities.

The earliest civilizations arose in the warm regions of Egypt and Mesopotamia. As man acquired the art of resisting cold by means of better houses and clothing and fires he was able to endure colder climates. Northward the star of empire made its way. Crete, Greece, Rome, Byzantium, and later northern Europe. Tacitus considered the climate of Germany and England too cold for civilized man. A dense population in high latitudes was impossible so long as wood was the only fuel, for the forests had to be removed to give room to fields. But the introduction of coal enabled cities to grow to any size. GilFillan[1] traces the ridge of contemporary civilization along the isotherm of 50 degrees Fahrenheit mean temperature. The five leading cities, New York, London, Paris, Berlin, Chicago, are within a little more than a degree of this. He ventures to predict that in the year 2000 cities like Detroit and Copenhagen will be in the position of cultural leadership and by A. D. 2100 it will be the turn of Montreal, Christiania, and Memel. Vilhjalmur Stefansson[2] holds the same theory of the northward trend of civilization and I do not know that he would stop short of the Pole.

But such predictions are obviously based upon the course of the cultural movement in the past and this is due to man's increasing control of heating appliances by which he can fight the excessive cold of northern latitudes. If, now, science should endow man with like control of cooling appliances by which he can fight the excessive heat of southern latitudes, might not the tide turn? When systems of cooling buildings become as well developed as heating systems are now may not even the tropics become habitable to the highest civilization? We are already, thanks to refrigeration, beginning to live *off* the tropics. Perhaps sometimes we may, by the same means, be able to live *in* them.

[1]The Coldward Course of Progress, by S. C. GilFillan. Political Science Quarterly, Sept. 1920.

[2]See World's Work, November, December, 1921; January, February, 1922.

THE AMERICAN FARMER AND EUROPE

I

A Clear Explanation of the Reasons Why Upset Conditions in Europe Cause Distress in the Mississippi Valley

By BENJAMIN M. ANDERSON, Jr., Ph. D.
Economist of the Chase National Bank, New York City

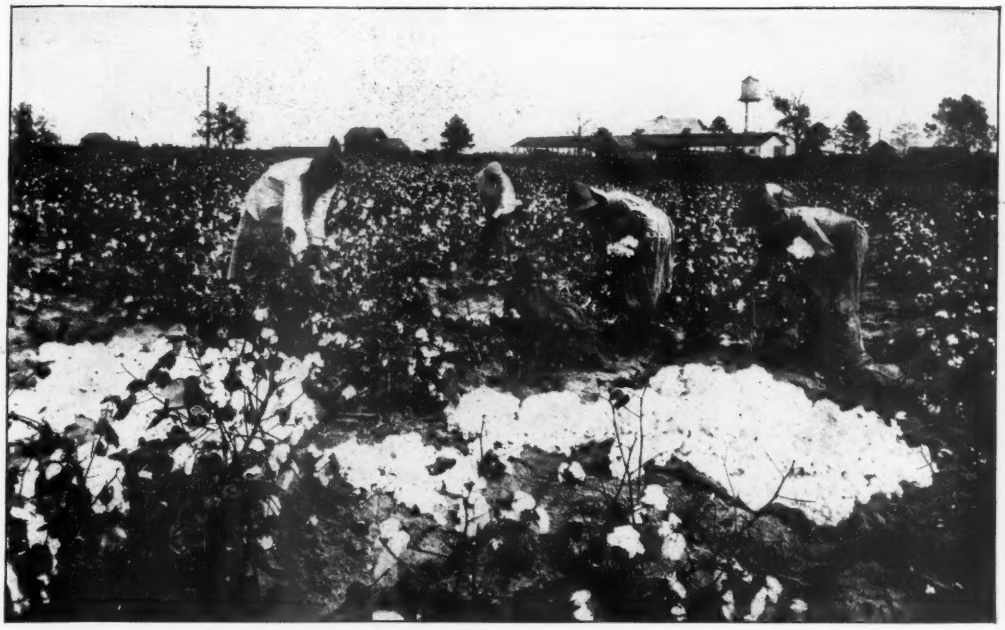
THE early 'nineties in the Mississippi Valley were a period of great agricultural distress. The owners of the best land frequently had difficulty in paying their debts. Real estate values were mercilessly slaughtered. Men could live on their farms, but had no surpluses out of which to purchase many of the commonest comforts from the cities. One of the writer's vivid boyhood recollections is watching Missouri farmers boiling their wheat and feeding it to their hogs, because the price of wheat in central markets had gone so low as not to justify the labor and cost of transporting it there. This was done on a considerable scale by farmers who lived at points remote from the railroads.

The farmers came to town on Saturday dressed in coarse boots, blue overalls and cheap, broad brimmed straw hats. If one visited their homes, one met a very gracious and generous hospitality. There was excellent country food—fried chicken, wonderfully flavored country ham, excellent corn bread and hot biscuits, fresh eggs, green vegetables, and other things which could be raised on the farm, but the housewife might sometimes have occasion to explain apologetically that it was necessary to substitute sorghum for "store" sugar. There might not always be coffee, or if there were coffee, the quality might be poor and the strength inadequate.

In general, farmers of that period were compelled to limit their purchases of goods on the outside market to the barest minimum. If they had any surplus at the end of the year, there were eager creditors waiting for it. The price of manufactured goods were much lower than they are now, but the discrepancy between prices of manufactures and prices of raw materials and farm products was so great that the farmers could buy very little of finished manufactures and, as a consequence, there were idle factories and terrible unemployment in the industrial centres of the country.

There were a good many factors involved in the depression and distress of that period. There was uncertainty regarding the future soundnesss of our money. We had an ill organized banking system, and we had deficits in the United States Treasury growing out of the unwise tariff legislation of 1890, and the unwise silver legislation which compelled the Government constantly to buy a large amount of silver, whether it was needed or not for circulation. Uncertainty regarding the future of the gold standard led to constant drains on the gold reserve of the Government.

More fundamental, however, than any of these causes was a maladjustment in the proportions between farm products and raw materials, on the one hand, and manufacturing capacity on the other. We had just finished twenty-five years of the most rapid exploitation of agricultural and raw material resources that the country has ever seen. We had filled up the Mississippi Valley and, following the transcontinental railways, which had been built in advance of the population, we had gone rapidly into the Far West. The expansion of manufacturing capacity had not kept pace with this development and, as a result, there came a relative excess of farm products and raw materials which so beat down the prices of these things and the purchasing power of their producers, that they could not keep even the relatively scant manufacturing capacity fully employed. There was a disturbance in our economic equilibrium. Business goes well when the various productive elements are properly balanced, and when different kinds of things are produced in right proportion. Produc-



THE CAROLINA COTTON GROWER

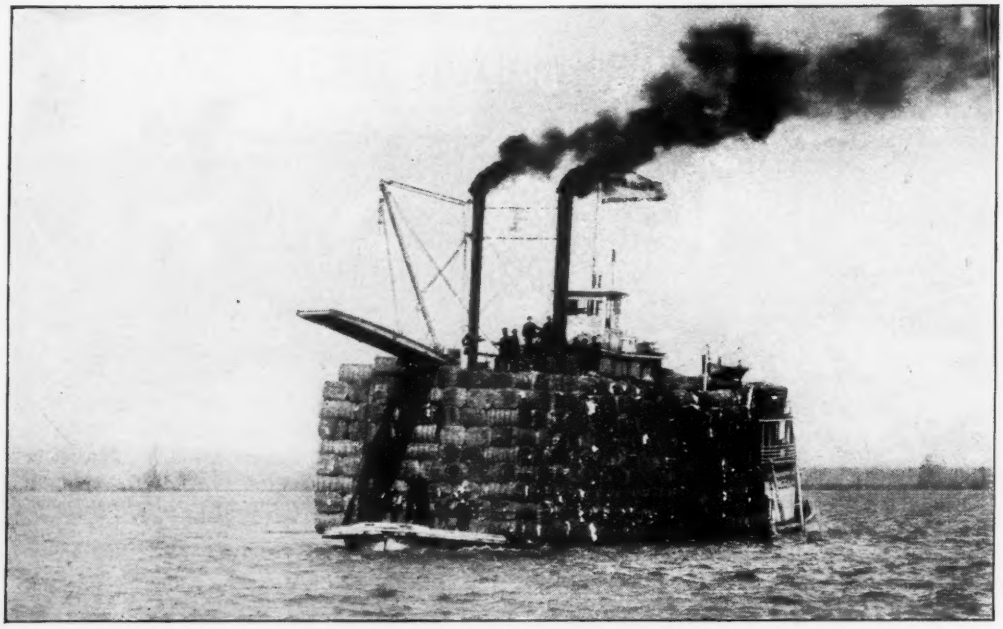
Received less for his product in 1922 than in 1921, but was forced to pay more for manufactured goods. There is a maladjustment, due not to overdevelopment of agricultural and raw material production, but to the fact that Europe is no longer the world's centre for manufactures and the market for farm products and raw materials. See illustration on page 179

tion and consumption go together if the balance is kept right. A great producing country is also a great consuming country if its equilibrium is maintained, but the substantial overdevelopment or serious injury of any great industry throws the whole thing out of gear, and then depression and demoralization come over the whole industrial situation.

The position of the American farmer to-day is vastly better than it was in the early 'nineties. Thanks to our impregnable credit system, splendidly organized under the Federal Reserve Banks, and thanks to the definitely established gold standard, we have avoided the most demoralizing features that followed the Panic of 1893. The underlying difficulties which brought about the Crisis of 1920 were much worse than those which produced the Panic of 1893, so far as trade and industry are concerned, but our freedom from financial and monetary weaknesses made it possible for us to bear the shock much better.

The maladjustments, which existed on a countrywide scale in the early 'nineties, exist to-day on a worldwide scale. In considerable measure, they existed on a worldwide scale in the early 'nineties, since there had been over-rapid development of cheap transportation and agricultural products in many parts of the world. The maladjustment exists to-day, however, not by virtue of overdevelopment of agricultural and raw material production, but rather because Europe, which before the war was the world's great centre for manufactures and the world's great market for farm products and raw materials, has partially withdrawn from her pre-war position in this matter. The world as a whole is producing very much less than it produced in 1913, but there is a relative overproduction, a relative excess of farm production and of raw material capacity. Europe is turning out very much less of manufactured goods than she turned out before the war. She is consequently unable to buy raw materials and farm products in normal volume.

Consumers normally pay for what they consume by sending back what they produce. Europe's prestige and her established credit with the world have enabled her for a long time to consume without producing in adequate volume, buying on credit from the outside world not only the foods which she previously bought, but also the finished



COTTON GOING DOWN THE MISSISSIPPI
In part, at least, bound for the European market

manufactures which she used to produce herself. The limits on this were not reached as speedily as would have been expected before the war. Europe's ability to get credit with the outside world has been surprisingly great, but the difficulties are multiplying, and the creditors of Europe all over the world have no interests so vital as to get Europe back to work so that she can validate her existing debts to the outside world, and so that she can pay cash for the new things that she buys.

What does it mean for Europe to "pay cash" for what she buys? It does not mean that she shall send out gold; she has already sent out too much gold. It means that she shall send out goods, sell these goods in foreign markets, and turn over the proceeds of the sales to her creditors in foreign markets or to those who are selling her new goods from the foreign markets. The great international cash is commodities, not gold.

We first met the shock of this maladjustment late in 1919 and early in 1920. Such revival as there had been in Europe after the war was primarily in agriculture rather than in manufacturing. Europe was buying a greatly reduced proportion of raw materials from the United States and a greatly increased proportion of finished manufactures. In 1920, she reduced her purchases of food from the United States, as compared with 1919, and a very substantial volume of farm products was turned back on our markets. Meanwhile, the other raw material producing countries of the world, India, South America, Egypt, and almost every other part of the non-European world, unable to find a market in Europe for their raw materials, poured them in on us.

There was a widespread illusion in 1919 that there was a scarcity of raw materials in the world, but early 1920 violently dispelled this illusion. Early in that year, an automobile tire manufacturer came to New York and explained to one of his bankers that he had rather more long staple cotton on hand than he liked to carry and, as a prudent man, he felt it would be wise to dispose of part of it. He had come to New York for that purpose. His banker concurred in his judgment and the manufacturer went out to make his sale, expecting to do it quietly without troubling the markets. He returned to see his banker next day, with a long face, saying that New York was full of representatives of automobile tire companies, which had the same idea and which had sent them to New York on the same mission.

WHERE THE COTTON GROWER'S PRICE IS FIXED

The cotton exchange, in Manchester, England, is the final world market for cotton (as Liverpool is the final world market for wheat) and consequently the price Manchester is able to pay determines what the American grower shall get. A vivid illustration of what upset conditions in European politics and industry mean to the American farmer

It was impossible for him to market his long staple cotton without a great concession in price. Similar situations were to be found in a good many of the raw material markets, and it was not long before the great crash in raw material prices began. Europe was not using the raw materials, and our own manufacturing capacity, greatly expanded though it had been by the war, was quite inadequate to take up and use all the raw materials that the world was pouring in upon us. The reduction in the export of farm products below the level of 1919, and far below the exaggerated expectations which the speculative market had held, led to violent breaks in foods also. With the break in price of foods and raw materials, the buying power of the producers of foods and raw materials was so greatly curtailed that they could not buy *at prevailing prices* even the reduced volume of manufactured goods which the reduced manufacturing capacity of the world was turning out, and there came a crisis for the manufacturer also.

The trouble was not a general overproduction. The world was producing far less than it produced before the war. The trouble was maladjustment, due to Europe's withdrawal from her position as the world's great producer of manufactured goods, and the world's great market for foods and raw materials. Following the great crash of 1920, the non-European world has gone through a tremendous effort at readjustment and has made a tremendous effort to restore its equilibrium. In the case of many raw materials which were being produced in excess, it was possible greatly to curtail production. Copper mines were closed down so that the surplus production might be worked off. Jute production in India was cut in half. Sugar production in many tropical countries was curtailed. The boll weevil effected a great curtailment of cotton production, and acreage also was reduced. In the cases of those raw materials where production could be curtailed so that the reduced consumption of the world could take off the

surplus stocks, very sharp price recoveries have come about. In the case of rubber, where it was impossible to curtail production and where, indeed, plantations planted years ago were continually coming into the bearing stage, the market long remained greatly depressed. Very recently, attempts are being made to curtail rubber production. But on the whole, raw materials recovered from their extreme price depression even though the raw material regions of the world were unable to resume full production.

Continental Europe could get along with greatly reduced imports of raw materials, but, as long as she retains buying power, she must continue to import large amounts of foods. She has continued to import substantial amounts of foods, but with increasing difficulty and at the expense of giving up a large amount of her gold supply. She has been able to buy, moreover, only at much reduced prices. During the very period when raw material prices were recovering from the shock of the crisis, wheat has been coming down to levels lower than those reached in the crisis. The average price of wheat in 1921 was $\$1.30\frac{1}{2}$. The average price in the first half of 1922 was $\$1.\ 17\frac{7}{8}$, whereas the average price from August 1, 1922, to October 10, 1922, was only $\$1.\ 03\frac{3}{4}$.

"The weakness in our markets for farm products in the summer of 1922 was very definitely due to weakness in Europe. The price declines both in wheat and cotton started in Liverpool." The break in wheat was very drastic. In the case of cotton, American factors were altogether bullish. We had a greatly reduced carryover and a progressively bad crop prospect. The cotton market exhibited a duel between bullish American factors and bearish European factors.

Predictions based on temporary market movements are exceedingly unsafe. Speculative markets are highly mercurial and any arguments based on the July, August, and September movements in the grain markets might well be upset by reverse movements before this article is printed. The figures are given merely to illustrate a tendency, which, despite short-run market movements, the writer is confident will be controlling. In the existing world situation, the tendency is for farm products and raw materials to be produced in relative excess and for finished manufactures to be produced in relative deficiency. There is in the world a relative excess of effective capacity in farm production, raw material production, and ocean shipping, and a relative scarcity of effective manufacturing capacity. The war was fought and the demoralization was greatest in the manufacturing centres. The food and raw material producing parts of the world, with the exception of Russia, were relatively little affected by the war.

FARMERS AND MANUFACTURERS

THE position of the American farmer *vis-à-vis* the manufacturer is worse in the autumn of 1922 than it was during most of 1921, so far as the price discrepancy is concerned. There has been an upward movement in the price of manufactured goods at the same time that there has been this downward movement in farm products. Unless agricultural prices markedly improve, it would seem highly improbable that the farmer will be able to purchase in adequate volume the products of the factories, and it would seem highly probable that a check in manufacturing activities on the present level of costs and prices would come with the necessity for further readjustment. Weakness, starting in Europe, reacting on the American farmer, works through to the American manufacturer. Weakness, starting in Europe, reacting on raw material producers and agricultural interests throughout the world, reacts on manufacturers throughout the world, including the manufacturers of Europe.

The basic difficulties lie in Europe. We have gone through our crisis and have had a substantial revival. The vastness and diversification of our resources, our sound credit and currency system and our system of free trade among our forty-eight states, together with other favorable circumstances, make it certain that we can have living business in the United States even if Europe does not improve, but it will not be satisfactory business for any considerable length of time. The great world maladjustment remains and we shall have frequent setbacks which will badly hamper us until Europe begins to mend.

In an article in the January number of THE WORLD'S WORK, we shall undertake to analyze the underlying causes of the continued disorders in Europe and to outline a programme for American coöperation with Europe which would set Europe going again.

FACTS *VS.* GUESSWORK IN BUSINESS

What Industrial Research is Doing to Lessen Costs to the Consumer and to Increase the Number of Useful Things in the World

By FLOYD W. PARSONS

THE curse of the day is the habit of guessing instead of knowing. The time has come, not only for the application of laboratory methods to problems in chemistry, but to business phenomena and even to political questions. The moment has arrived when we must go in for scientific research on a broad scale, or prepare to relinquish our leadership among the nations of the world. In the past the progress of the United States has been due to the abundance of our raw materials; in the future, America's rate of advance will depend upon the mentality of her people.

Scientific research is something far more than merely a pioneering adventure into the unknown, simply to satisfy the eternal curiosity of a few theorists. The technical investigator precedes the inventor. In the field of science the relation between the known and the unknown has been truly likened to the surface of a sphere; the greater the sphere of knowledge becomes, the greater the surface of contact with the unknown. The further we progress in any line of activity, the faster will be our progress in the days to come. The more inventions we get, the more we will need. The more new industries we create, the greater the number of fields of enterprise that still lie ahead of us. The more labor-saving devices we get, the higher the wages and the greater the opportunities for the nation's workers.

The whole question of the relation of research to industry is assuming a new importance. Most of our modern comforts and practically all of our so-called luxuries are the outgrowth of laboratory investigation. Business men are looking to the laboratory more and more for light on the problems of manufacture. If we need more of a product of the soil than seems to be available, we do not assume that the only solution is an added acreage. The scientist is called upon to show how much more of the product can be produced per acre. So it is in the factory. We no longer figure that a larger output entails more men, but rather that the solution involves an increased output per individual.

Scientific investigations come under two heads: First, there is the so-called pure research, which is devoted to the discovery of hitherto unknown truths. Newton, who discovered the law of gravity, and Faraday, with his electrical discoveries, were investigators of this class. Then we have what is called applied research, which deals with the application of known laws to overcoming specific problems. A machine that is now doing two things is developed to do two other things, and a material made for one purpose is adapted to a second use. In times past our commercial men fought shy of the first type of research. The results were too intangible and the possibilities too indefinite. But now a change has come about, and progressive leaders of industry are urging the establishment of associations to promote not only applied, but pure research. Corporations are no longer demanding an immediate return for each dollar spent. Managements are developing a long-distance point of view, and this exhibit of imagination augurs well for American business.

One great discovery may revolutionize an industry, and the results of such research may repay a thousand times over the expense and effort put forth. The scientific investigator is the chief enemy of the high cost of living. The invention of the tungsten-filament lamp has saved the people of the United States more than a billion dollars each year, which otherwise would have been expended to produce the same amount of light from the old carbon-filament lamps. It was due to the patient experiments with gases that we are able to enjoy the benefits of anesthesia. If Faraday had not had an inquisitive and patient mind, we would not have been given

the general laws of induction that made the invention of the telephone possible. An inquisitive German optician persisted in his investigations until he finally succeeded in making discoveries that brought about the transfer of supremacy in the manufacture of photographic lenses from Great Britain to Germany. Hertz's series of brilliant experiments demonstrating the existence of wireless waves was more of a theoretical novelty than a practical discovery; however, to-day wireless communication is based on this research.

ADVANCES IN INDUSTRIAL CHEMISTRY

THINK what the coal-tar industry means to civilization, and yet there would not be such an industry were it not for half a dozen simple discoveries in organic chemistry. More than 2,000,000 American workmen, producing goods valued at more than $5,000,000,000 are now employed in plants that are directly or indirectly dependent upon dyestuffs for their successful operation. The dyestuffs industry is a standing army which supports itself. Thanks to our research chemists, we are building up an American dye business second to none in the world. It is no exaggeration to say that the chief hope of the future in medical science lies in the great coal-tar industry. Adrenalin, salvarsan, commonly called "606", and hundreds of other famous drugs have been produced synthetically from coal-tar products. As a result of this work, the cost of getting these drugs is now only a fraction of what it was when they were secured from animal sources. One chemist recently isolated the active principle of the thyroid gland in coal tar, and there is little doubt but that other equally rare substances will soon be prepared in pure form from this by-product of coal.

Looking in another direction, it is safe to say that we would not now have an electrochemical industry if it had not been for Sir Humphrey Davey's purely scientific study of an electric current's effects on caustic potash and caustic soda. The whole profession of mechanical engineering is based on the laws of gravitation and motion mostly discovered by one man. It is never possible to know just when a purely theoretical fact is going to become a revolutionary principle. As someone once said: "You can add wings and stories to an old house, but to build a new one, you must begin with the foundation." The research worker alone is able to supply business men with the basis for a new line of commercial or industrial development.

THE ELEMENT OF CHANCE IN RESEARCH

A STUDY of all the worth-while advances that civilization has made brings out the interesting fact that no one, not even the research worker himself, can forecast the probabilities, let alone the possiblities, of patient, thorough scientific investigation. The element of chance enters largely into the work of all those engaged in research. It was mostly by accident that a way was found to separate nickel from copper, and thereby establish the important nickel mining industry of Canada. Colonel R. M. Thompson knew that his so-called copper ore, from the Sudbury district of Canada, contained a large amount of nickel, but there seemed to be no way to get the two metals separated. The Government of the United States was contending with a yellow-fever epidemic in New Orleans, and in order to isolate the patients and keep them at a sufficiently low temperature on a hospital ship equipped with a refrigerating apparatus, it was found necessary to secure a metal which would withstand the corrosive action of the ammonia gas used in the refrigerating process.

Colonel Thompson was asked to supply the nickel, which it was believed would answer the purpose, and this request caused him to start a series of experiments with every known flux that could be used in smelting the ore. The first series of investigations brought no satisfactory results, so it was decided to clean up and start over. While the work of cleaning up was going on, one of the superintendents came across a pot of metal whose contents appeared to be different, and this started an investigation which showed that the copper and nickel had separated, the latter going to the bottom of the pot. It was therefore evident that some one of the fluxes used, or a combination of several of them, would bring the desired result, so the experiments were started over again, and by a process of elimination the proper combination was discovered and a method of isolating the nickel perfected.

Likewise, we may refer to the art of electric welding, which has developed into quite an important business throughout the

world. Here again the experimenter was pursuing an aim quite apart from any thought of fusing two metals. Colonel Thompson, the investigator, was attempting to prove that electricity, of whatever name, was the same, differing only in tension, quantity, and steadiness. In carrying on the experiments, he found that the current used had heated the ends of the primary coil, which were in contact, and had brought them to a point of fusion, causing a union to take place. This result started a train of thought in the experimenter's mind, and succeeding experiments showed conclusively that an electric current could be used to weld metals. As a result of this discovery, the electrical industry was literally revolutionized, for up to that time, it was not possible to get any considerable lengths of insulated copper wire, except such as was made with brazed joints. The copper-wire manufacturers refused to believe that the red metal could be welded, so Colonel Thompson found it necessary to develop a practical method of welding which has been gradually perfected into the present scheme of electric welding now in universal use.

MRS. EVERSON'S ORE SEPARATION PROCESS

THE whole field of research is a virgin land of romance and adventure. The stories of the world's great discoveries, however, are not always filled with happiness, and sad to relate, they often tell of patience and genius unrewarded. The great mining industry has been the graveyard of more hopes than perhaps any other business. More than fifty years ago a Chicago physician put $40,000 into an unsuccessful mining venture. His wife, in order to save something from the wreck, took up the study of mineralogy. She discovered the chemical affinity of oils and fatty substances for mineral particles. Further experiments led to the development of a process for separating the valuable portion of certain ores from the gangue, or waste, that is mixed with them. The doctor's wife, a Mrs. Everson by name, secured a patent for this separation process, as far back as 1886, but all her attempts to secure financial backing for her scheme proved unavailing. Discouraged in her efforts, and having lost her husband, Mrs. Everson packed away her papers and moved to California, forgotten by the mining industry and ignored by later claimants to the process which she had first discovered.

Early in this century mining companies throughout the world started in to recover the mineral values that existed in waste piles left by processes which had permitted only partial recovery of the riches in the ore. The method that was used in this work was based on a flotation process similar to the separation plan worked out by Mrs. Everson. Mining companies engaged in legal battles involving tens of millions of dollars. Finally someone started to look for the woman who had secured an ore-separation patent many years before. When at last she was traced the searchers learned that fire had destroyed her home, with all her papers, and the woman had died the year before. Her invention had failed, not because it lacked any of the essential principles of mineral flotation, but because her discovery was in advance of what appeared to be the needs of the day.

MICHAEL PUPIN'S EARLY TRAINING

THAT the spirit of research is inherent in us, and needs only to be developed, is clearly evidenced by the story of Michael Pupin, whose inventions have been largely responsible for the great success of the science of telephony. At the age of twelve, Pupin was a herdsman in Serbia. Moonless nights in Serbia are so black that objects cannot be observed when they are more than twenty feet away. On these dark nights, the cattle would be attracted by the fragrance of the corn fields a few miles distant, and since many cattle thieves lurked in the corn, it was necessary for the herdsmen to be watchful and see that the animals did not stray into the fields of corn. The only way the guardians of the cattle could keep the steers from roaming away was to follow them by sound.

The boys who took up the life of a cattle-herder were early taught the art of listening through the ground. The first lesson consisted of sticking a wooden knife into the ground, and then the boy who was being trained would put his ear to the handle of his knife, while another herder, a hundred or more feet away, would strike his knife, similarly stuck in the ground. The first boy would have to tell the direction and guess the distance. This initial lesson in wave transmission was of great value to young Pupin.

He observed that sounds carried farther through hard, solid ground than through plowed ground. Other phenomena stirred the lad's imagination and planted the seeds of thought with respect to wave transmission, which bore fruit later in many discoveries of great practical value, chief of which is the Pupin "loading coil", which is an essential part of the equipment used in long-distance telephony. More than 600,000 of these Pupin coils are now used in the United States alone.

SKEPTICISM OFTEN THE BARRIER TO FURTHER ADVANCES

THE history of research has indicated the same human frailties since the beginning of time. It has always been the same story of skepticism and doubt. Ever and always there has been the similar conclusion that no further advances in a particular field are possible. Ever and always this has been disproved, though in the majority of cases the greatest skeptics have been the very people situated to know most about the matter in hand. The memoirs of one great scientist tell how he was afraid to include his most valuable discovery in his graduation thesis for fear he would lose his doctor's degree. The leading scientists of the day were the chief opponents of his new theory. Apparently we never seem to learn that the unknown is absolutely infinite.

The development of aviation was retarded by the arguments of dozens of highly trained thinkers who pointed out the impossibility of flying long distances through the air. Such facts make it easy to believe the story that the first steam-propelled ship to cross the Atlantic Ocean brought to our shores the earliest copies of a book in which was explained the impossibility of transoceanic steam propulsion. Every scientific accomplishment designed to revolutionize our lives must first pass through a stage when it is pronounced impracticable and impossible. Fortunately, we are advancing in intelligence, for in the olden days the opposition to scientific research was so strong that it sometimes led to social abasement, torture, and death. In fact, ages ago, the students of research were looked upon with so much suspicion that they found it necessary to exercise great secrecy in their work, and this led to the use of symbols representing air, fire, water, etc., many of which survive to the present day.

Research gave us the telephone, the telegraph, the automobile, the motion picture, and radio. In the generation just dawning, scientific investigators will make known discoveries that will far surpass those of the past, and which will materially change our present mode of living. No field of research offers greater opportunities than that concerned with the production and consumption of foodstuffs. Not so many years ago, American farmers produced pork at a cost of 44 cents per pound. Scientists started investigating, and in a short time information was made available that permitted our farmers to reduce the cost of producing pork to 4 cents per pound. Research showed our agricultural population how to reduce losses from the Hessian fly to the extent of 20,000,000 bushels of wheat in four years; it found the cause of wheat rust and discovered a remedy; it located the Texas cattle fever tick and showed how to control the pest; it converted great areas of barren land into fertile acres producing valuable crops; it has brought about an improvement in marketing methods, all of which is very much in the interest of the average citizen, for the reason that the elimination of waste and the betterment of production methods materially reduce the cost of living. In the meantime, such savings as are brought about in agriculture benefit the farmer through increasing his profits.

THE WASTE DUE TO IGNORANCE

THE need of greater research in agriculture is urgent. Ways must be discovered better to conserve the fertility of our soil, or before many decades have passed much of the land of our American farms will be as arid as the acres of ancient Babylon. Tens of thousands of acres of valuable forest land have been practically denuded of timber that represented the growth of centuries. While this waste of wood has been a terrific blunder and an economic crime, it was hardly more inexcusable than our present methods of cereal production. Research will supply us with new and nourishing foods that are now unknown. It will give us knowledge concerning the physiology and chemistry of nutrition, the chemistry of food manufacture and the economics of food distribution.

It was research that gave the world its present understanding of vitamins, and although this knowledge is limited, such facts as have been disclosed have brought about the cure of such diseases as scurvy and other ailments that could not be remedied by drugs or medicines. It was the scientific investigator who discovered that scurvy and beriberi were due, not to a lack of food, but to a lack of variety in the foods eaten. As for beriberi, it was found that this disease could be cured or prevented by having the polished rice replaced in part by barley.

VITAMINS

THE result of this line of research developed the fact that neither animals nor humans could live on purified foodstuffs. A steady diet of proteins, starches, and sugars, although high in fuel value, brings a train of diseases one of which leads to blindness, and the experimenters found that the ailments could be cured by adding cod liver oil or the fat of butter to the diet. Extended research in this matter of a proper food supply has made great progress, but it is doubtful if up to the present time any one has ever been able to determine just what are these vital elements that are present in certain foods and that are essential to a proper growth and healthy existence in all animal life. We call the elements "vitamins", but we do not know their chemical structure, and there appears to be no proof that any one can make them in a laboratory. Two of these vitamins are supposed to be present in milk, vegetables contain another, while fruits contain either a fourth or are a source of one of the three already mentioned. Suffice it to say that these vitamins are absolutely necessary to health and growth; they are abundant in common foods, and while we don't know just what they are, it is likely they are something on the order of a cementing agent, and serve about the same purpose in the human body as does the mortar that binds the brick together in the building of a house. It is altogether probable that research will one day bare the secret of the vitamin, and perhaps then the human race will have been put in possession of knowledge that will bring about a realization of the scientists' dream of lengthening the span of human life.

Going on into the field of industry, we find a new respect and a greater appreciation of research than ever existed before. Leaders in many lines of activity have discovered that scientific investigation is the most effective weapon available to them in defending their businesses against false accusations and unjust attacks. For example, let me refer to the American laundry industry. For years laundrymen were blamed every time a garment or other article was injured or destroyed in the wash. Little by little, laundry methods were improved, and yet in spite of the progress that was made, the destruction of fabrics continued, and the public persisted in its condemnation of laundry practices.

Finding that their customers would not be convinced by mere talk, the laundrymen banded together and decided to get the real facts through a carefully conducted campaign of research. Now they are showing the public that responsibility in the conservation of fabrics must be shouldered largely by the people who purchase washable goods. Investigations indicated that a large part of the goods spoiled in laundering are either defective materials or fabrics which have been abused by the owners before being sent to the laundry. Many so-called "silk" shirts, under a microscope show heavy white threads of cotton as filling, with only the warp threads of silk. There is no possible way to launder such shirts satisfactorily.

The laundry research showed that table linen often fails in the wash, due to the use of short fibres in long floats. Dish towels, table napkins, and hand towels are frequently used for general mopping purposes or for cleaning shoes; and the accumulated dirt can only be removed from such articles by drastic treatment in the laundry, which rough handling often damages the fabric. In many cases, cotton and linen materials are loaded with excess starch to give the fabric "body", and when the article returns from the laundry minus the "body" the owner always blames the laundry. Sometimes a salt of tin is used to give weight to silk fabrics; sometimes twisted paper rope is woven into a fabric instead of cotton or wool thread, and in all such cases the defective material fails in the wash. Research is making the life of the laundryman a little more bearable, and is

educating the public to be less hasty in placing the blame for its laundry losses.

Only a little more than a year ago the Tanners' Council of the United States decided to go in for research so that more definite information might be accumulated with reference to the curing and tanning of hides. Although this work is only in its infancy, sufficient results have been obtained to bring about a probable saving of no less than 2 per cent. in our great tanning industry, through adding to the life and durability of the average hide. Among other things, it was discovered that a thicker and better leather can be made if the length of time elapsing between the animal's death and the salting or brining of its hide is materially reduced. The bacteria that destroys the hide are sustained by the blood that remains on the hide, so if this blood is removed immediately, and the brine is speedily diffused into the hide, the deleterious effect of the destructive bacteria is greatly lessened. More than a year was spent in studying this first problem in tanning, and yet the saving that will result to the industry from the facts disclosed will likely be adequate to finance an extensive research in leather for some decades to come. The solution of other problems in this line of business will probably bring equally large savings, and what is true of the leather industry is likewise true of every other great American business.

WASTING 8 PER CENT. OF OUR GASOLINE

FURTHERMORE, research need not be confined wholly to laboratory methods. Our wastes of valuable raw materials are becoming so great that it behooves each and every citizen to do a little scientific investigating on his own account. For instance, we have here in the United States about 11,000,000 motor vehicles, of which approximately 5,000,000 are Fords. Assuming that each Ford travels 5,500 miles annually, it follows that all of our Fords taken together have a yearly mileage of 27,500,000,000 miles. Investigation shows that the average mileage of Ford cars to-day is approximately 18 miles per gallon. Some drivers get more and some less, but accepting 18 miles as the average for the country, this means that Ford cars in the United States consume 1,500,000,000 gallons of gasoline annually, or 30 per cent. of our total production of this fuel.

In comparative tests with other cars, the Ford should give 24 miles per gallon, and would give this mileage if it were properly equipped for efficient operation. The chief cause of Ford inefficiency is the carbureting system. If all Fords were equipped with an improved carburetor, there would be a 25 per cent. saving in gasoline, or about 400,000,000 gallons yearly. This means that the nation's loss from the waste of fuel in Ford cars is no less than $100,000,000 annually. An improved carburetor would add $25 or $30 to the cost of each Ford car, but from the viewpoint of national conservation in the matter of a valuable and wasting resource, this added tax on the pocketbook of purchasers of Ford cars would appear to be more than justified. However, this waste is no more glaring than dozens of others to which we meekly submit, and we should get hold of the truth that it is only through scientific investigation that vital facts will be disclosed and the public mind awakened to the need of better practices.

The industrial situation in this country to-day, coupled with our experiences in the past, emphasize the vital necessity of the United States entering immediately on a greatly enlarged programme of national research.

FERTILIZING THE FARMS WITH BRAINS

Making Farming Pay in Cash and in Social Life by the Use of Modern Methods of Tilling and Accounting

By JOHN K. BARNES

WITH practically all the good farming land of this country now under cultivation and much of its natural fertility sucked out; with people still moving from the country to the cities, so that less than one-third of our population is now left on the farms—31,614,269, or only 29.9 per cent., according to the last census—all that keeps us and will continue to keep us a self-sustaining nation is greater efficiency in agricultural production. For the farmer this means ability to raise crops large enough to show a profit on his labor; for the growing urban population it means a sufficient food supply to sustain life at prices that it can afford to pay.

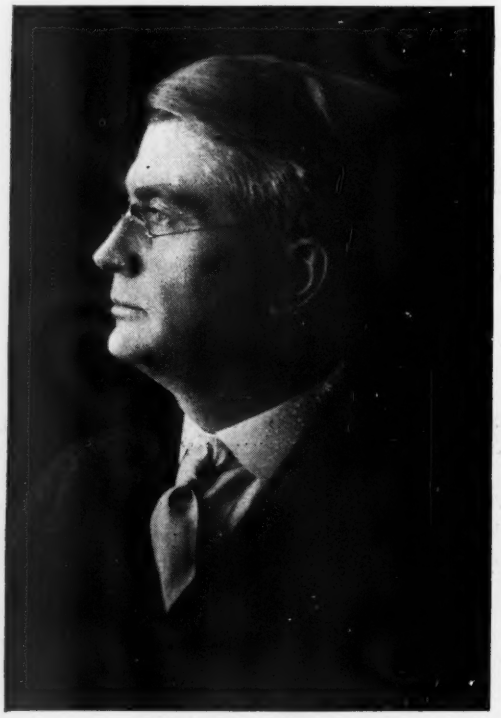
The teaching of scientific agriculture is a matter in which the city dweller is as vitally interested as the farmer. There should be as much rejoicing in the cities as on the farms when a new variety of hardy corn is produced that extends the cornbelt fifty miles northward or when a hundred million dollar macaroni-wheat industry is developed in this country. Some day we shall erect monuments to commemorate the achievements of such men as Dr. Seaman A. Knapp, who, at the age of seventy, went into the South to show the cotton growers how best to meet the invasion of the Mexican boll weevil and by the educational methods he there developed laid the foundation for the modern teaching of scientific agriculture. Or, possibly, to Dr. B. R. Coad, a government entomologist, who is now demonstrating in Louisiana the effectiveness of a low-flying airplane spraying calcium arsenate over the cotton fields as a means of repelling the present devastating advance of the weevil. Great are these victories of peace, and surely those who are making many blades grow where few or none grew before are worthy of a place in history.

In the latest annual reports of the directors of agriculture extension of the Pennsylvania State College in the East and of the University of California in the West are to be found such interesting items as these: In fifty-five of the sixty-seven counties of Pennsylvania last year 48,800 bushels of disease-free potato seed was planted in comparison with the kind of seed ordinarily used by the potato growers of that state and showed an increased yield of nearly 70 bushels to the acre, while spraying demonstrations in fifty-seven counties, covering ten thousand acres of potatoes, resulted in a gain of 74 bushels to the acre at a cost of only $10 an acre for six sprayings. In California, new varieties of barley were developed at the state experiment station and the planting of one of these in one county alone is expected to add at least half a million dollars to the value of that county's grain crops. Demonstrations of a new method of pruning resulted in 25 to 50 per cent. increase in fruit production. What a gift to present to the fruit growers of California and the nation!

Such fruitful experimental work as this is going on in every state in the Union, and the knowledge of it is being taken to the door of the farmer and presented to him through the windows of his brain by the demonstration method inaugurated by Dr. Knapp in the South. More than six thousand potato growers of Pennsylvania saw with their own eyes these remarkable results of seed selection, and they know that it costs no more to raise a healthy plant than a sick one. Still more watched the effect of scientific spraying. And in California more than ten thousand interested people watched the comparative results of the pruning demonstrations. The worth of all this is difficult to evaluate, but the Department of Agriculture, which jointly with the extension departments of the state agricultural colleges directs this work, has estimated that in 1919 the actual profits from sixty-five thousand demonstrations during that year were more than $19,000,000. This is a permanent gain and a cumulative one, for

the lessons once learned in this way result in greater profits as the application of them spreads from one farm to another.

The need for greater profits on the farm has long been evident to people of understanding. For as Secretary of Agriculture Henry C. Wallace said in a speech about a year ago, "We are approaching that period which comes in the life of every nation when we must determine whether we shall strive for a well-rounded self-sustaining national life in which there shall be a fair balance between industry and agriculture or whether, as have so many nations in the past, we shall sacrifice our agriculture for the building of cities and expect food to be produced not by independent farmers, but by men and women of the peasant type."



DR. HENRY CHARLES TAYLOR

Head of the new bureau of agriculture economics in the Department of Agriculture, a bureau designed to help the farmer from the time he begins to wonder what he should plant to the time when he disposes of the product in the city market. Dr. Taylor is a student of agricultural conditions in this country and Europe and is a leader in the subject of agricultural economics

In the past the farmers in the newer and larger producing sections of the country have enjoyed a steady growth in land values which has compensated for years of little profit from their crops. And in the mind of the general public this unearned increment has justified the low prices which farmers have received for their products. When the city dweller has seen his country cousin sell his farm, which cost him or his father little or nothing, for enough to retire and live on for the rest of his days in town, he has naturally concluded that there is good money in farming if one likes the long hours of work and lack of social pleasures attached to it. In this our pioneer farmers, who took up and developed the virgin land of this country, have undoubtedly benefited more than have the rest of the population from the lower food prices that their labors have insured.

But the robbing of the soil of its fertility has benefited much more that other half—now two-thirds—of our population which is not engaged in food production. This majority has been living on the patrimony of the farmer. The latter has been parting with his fertility capital; both he and the city dweller have been living on his principal, and in many cases he has not been getting enough from his crops to replace the spent fertility on his farm. Where he has parted with so much of it that he can no longer continue producing without replenishing, he is at a disadvantage with the farmer possessing newer land that still has a considerable amount of unexpended fertility. It is this, and the fact that they did not have as much fertility to start with, that accounts for the abandoned farms in the East. They could not produce economically in competition with the newer land of the Middle West.

For illustration, at present prices of commercial fertilizer it takes 23 cents worth of fertility out of the ground to raise a bushel of corn. Oats take less, while wheat and rye take more nourishment from the soil per bushel. This figure gives some idea of the amount that farmers should set aside from their receipts for depreciation and replacement of fertility alone. With corn selling for little more than 60 cents a bushel, the importance of this item can be realized.

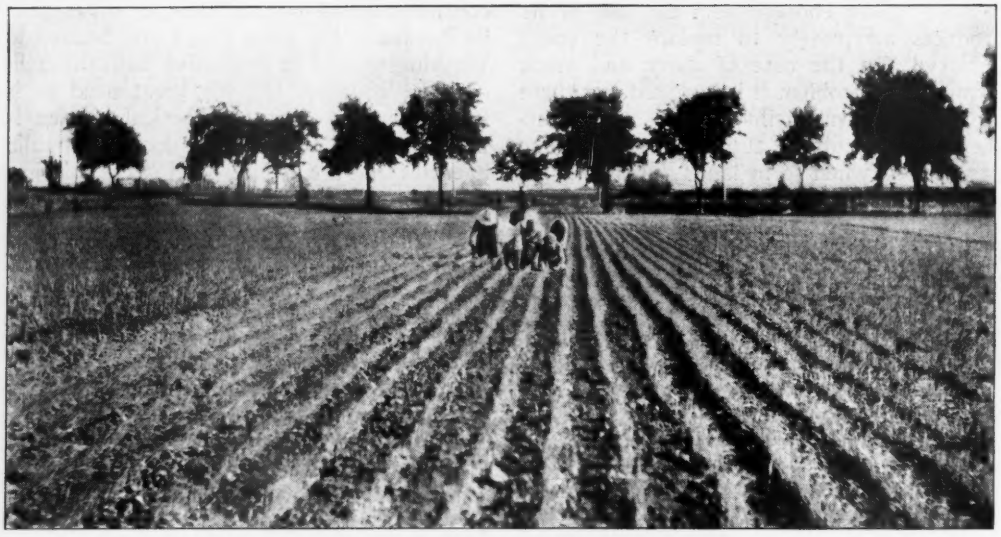
And now that practically all the available farming land is or has been occupied this need of replacing exhausted fertility is becoming more and more urgent every year, and the farming industry has reached the point where

it must utilize enough from the sale of its products adequately to replace the spent fertility. (In the case of dairy and stock farming this problem is less urgent, for there the cattle return fertility to the soil). Furthermore, agricultural authorities say the time has arrived when farm lands will no longer advance in value as they have in the past, and this means that the farmer will not enjoy this increment in value to offset a low profit from his crops. The farmer, therefore, faces an economic crisis that was brought forcibly to his attention by the severe decline in farm prices following the war.

In earlier articles it has been told how the farmer has set out to solve his problems by combining a million strong in county farm bureaus and in the American Farm Bureau Federation; how, through coöperative marketing, he is substituting merchandizing for dumping of his crops and thus reducing the spread between what he gets and what the consumer has to pay; and how, by organizing, he has made his voice heard and heeded in Washington and in legislative halls throughout the country. In his great need he is fortunate that another practical service is being brought to his very door by public agencies that are as interested in the solution of his problems from the national viewpoint as he is from his own. These agencies are not only helping him to get larger and more efficient production—some of the results of which have already been noted—but they are aiding in an advisory capacity in the organization of coöperative marketing enterprises so that the other half of successful agriculture—the marketing of the crops at profitable prices—is now receiving due attention from this source. In 1920, according to Department of Agriculture figures, farmers effected a saving of $21,000,000 through coöperative enterprises which county agents of the agricultural extension service assisted in organizing.

TESTING SEED CORN

Last year sixty-three thousand farmers tested 240,000 bushels of seed corn and planted 1,600,000 acres with the selected seed. Here are farmers learning to select and test corn. The extension agent gets them to plant check plots of untested seed alongside of the selected seed, and the results, which may be twice as large a yield, drives home the lesson



THE OLD WAY OF FARMING

In Cook County, Illinois, which embraces the City of Chicago, 85 to 90 per cent. of the onion sets of America are raised. Cultivating between the rows is now done with a gasolene tractor, but the final weeding must always be done by hand

This national viewpoint is not purely economic. We do not expend public funds in the aid of agriculture simply to insure the production of enough food to eat. The social side is of more importance. More than a hundred years ago Thomas Jefferson said: "We Americans will remain virtuous as long as agriculture is our principal pursuit; when we get to be piled upon one another in large cities, as in Europe, we shall become impoverished and corrupt as they." And President Roosevelt, when appointing his Country Life

THE NEW WAY

The modern farmer employs the garden tractor, which takes the place of several men with wheel hoes. The Farm Bureaus encourage the use of labor saving machinery such as this

"SEEING IS BELIEVING"

When the onion smut appeared in Cook County, Illinois, and this valuable crop was threatened with extinction, Mr. L. L. Heller, the county agent, called on the research department of the Illinois Agricultural College for help in solving the problem. The solution was found in the formalin treatment applied not only to the seed, but to the ground in which the seed was planted. This picture shows members of the Cook County Farm Bureau viewing the results of this treatment. Rows 1, 3, and 5 have been treated, while rows 2 and 4 have not. The yield of marketable onion sets from the treated rows was ten times that from the untreated ones

Commission to study farming conditions, wrote, "No nation has ever achieved permanent greatness unless this greatness has been based on the well-being of the great farmer class, the men who live on the soil; for it is upon their welfare, material and moral, that the welfare of the rest of the nation ultimately rests." The farmers' problems are the nation's problems. What is being done by public agencies to help solve them is one of the most satisfying chapters in the expenditure of public funds.

It was in 1839 that the Federal Government began the free distribution of selected seeds through the patent office as a means of improving the quality of farm products. This practice still continues, although it has largely outlived its usefulness and is much abused by politicians. It was in 1862, under Lincoln, that the Department of Agriculture was formed, and in that same year the Federal land grant act was passed which resulted in the establishment of the state colleges and universities which now hold such an important place in our system of higher education. In 1875, the first agricultural experiment station was established in Vermont and in 1887 the Hatch Act was passed by Congress to provide for the maintenance of experiment stations in all the states. In 1889 the Department of Agriculture was raised to Cabinet rank and later, under the tenure of James Wilson, Secretary of Agriculture from 1897 to 1913 it grew greatly in importance and in service to the farmer. To-day it is the greatest organization for scientific research in agriculture in the world, with twenty thousand employees, two thousand of whom are scientists engaged in research work.

In 1914 the Smith-Lever act was passed by Congress to provide for extension work in agriculture and home economics. This is the keystone of the arch of public service to farming. Dr. Knapp had said, "There is only one effective way to reach and influence the farming classes, and that is by object lessons." The Smith-Lever act makes it possible to reach them in that way, and the methods that Dr. Knapp inaugurated in the South, are now being used in 2100 of the 2650 agricultural counties of the country. This act opened the way for the coming of the county agent — the true friend of the farmer. With him has come the home demonstration agent, doing much to lighten the burdens of the farmer's wife, and the boys and girls club leader, who

"BLESSINGS ON THEE, LITTLE MAN"

The schooling of the farm child has too often been an incidental part of his life. To-day there are springing up throughout the United States these consolidated rural schools which are taking a much more important place in the life of the farm boy and girl. Here they study agriculture and home economics and learn to be better farmers than their fathers and mothers. The part played by the automobile and good roads in bringing this better school to the farm child as well as the farm child to the school is evident in this picture. What boy would trade this bare-foot freedom for a city school?

is doing as effective and important work as either of the others.

While Dr. Knapp was carrying the message to Garcia in the South another interesting character had entered the picture in the North who is worthy of note. About 1907, Mr. A. B. Ross, a young corporation lawyer of Cleveland, suffered a nervous breakdown and his physican recommended that he go off into some quiet, mountainous country, get a horse and buckboard, and spend several years in relaxation and quiet, out in the open air. The rest of his story I am going to tell in the words of Mr. O. M. Kile, from his excellent book on "The Farm Bureau Movement:"

"Ross bethought himself of his childhood home among the foothills and valleys of the Cumberland Mountains, in Bedford County, Pennsylvania—not far from the Maryland line. There he followed his doctor's advice assiduously. His buckboard became a familiar sight among those hills, threading its way in and out among the narrow valleys and following the borders of the highland plateaus. Craving companionship and prompted by a keenly inquiring mind, he usually spent a part of his day talking with the farmers he met and asked an interminable lot of questions. Whenever a farmer thereabouts saw a buckboard drive up to the roadside and a rather tall, medium weight, quietly dressed man jump out and come limping across the field he knew that he would have to answer all sorts of questions about corn and cows and cut worm and cockle burrs and crab apples and anything else along agricultural lines that might happen to have attracted Ross's attention.

"But the farmers soon got to liking Ross and his questions. He seemed so absolutely sincere and hungry for knowledge. Soon, too, they found that he could bring them bits of valuable information now and then. Just how Farmer Jones, over on the other side of the ridge, had saved his cow that had milk fever; or how Farmer Brown, in the adjoining township, grew the finest crop of clover to be seen in the country; or what Farmer Smith did to kill the codling moth was all very interesting news and very welcome information.

"Ross was much troubled to learn that the average corn yield was only 10 or 12 bushels to the acre. He found that while they had formerly grown clover, this was now no longer possible and the crop had been practically abandoned. There were many small orchards in the county but no one sprayed, and the dealers usually came in and took the fruit at about $1.25 per barrel. Ross thought he ought to be able to put his time to good use in helping these people. He sent to the Department of Agriculture at Washington and got some bulletins. These he studied carefully, and in the course of a year or two he took to 'translating them into United States' as he said, and at his own expense mimeographed and distributed copies among the farmers. Later he bought some improved seed corn and gave it to farmers who would agree to grow it according to certain directions.

"The people of Bedford County called Ross a crank, but, nevertheless, came to him more and more for advice and help. At that time Ross was trying to get legumes to grow, and was experimenting with 'inoculation.' Inoculation was then looked upon as more or less of a fake—even by many agricultural scientists. But Ross grew excellent clover where he inoculated and practically none at all where he didn't inoculate. That was evidence rather difficult to set aside and the Department of Agriculture, still skeptical, finally sent a man to look over Ross's experiments.

"The demands upon Ross grew heavier and heavier, and, lawyer like, Ross went to Washington and called upon the head of every bureau or division in the Department of Agriculture, putting up to each the question, 'What can your division do to help the farmers of Bedford County?'

"Finally Ross ran into Dr. W. J. Spillman, who [due to Dr. Knapp's success in the South] had been gradually coming to the conclusion that an agent in each county was the ultimate solution of the better farming problem. Dr. Spillman was in a most receptive mood that day and as Ross related his experiences the resolve came to him to make a definite tryout of the county agent idea. So when Ross came to his inevitable question 'What can you do?' Dr. Spillman was ready with, 'How would you like to go on the payroll of the Department, coöperate with us through our specialists, receiving in addition to a nominal salary your expenses and the franking privilege?'

"This was too much for Ross. It was so much more than he had expected in the way of assistance. But he managed to accept and so the deal was closed. The word 'camouflage' had not yet been imported at that time, but the art was known nevertheless and by its use Dr. Spillman secured the necessary funds to finance the project.

"On March 1, 1910, Mr. A. B. Ross took up his duties as the first regularly constituted county agricultural agent in the Northern states. The work went forward with new vigor and soon Ross had a stenographer as busy as himself. In order to cover more ground, the buckboard was displaced by a small automobile which before long acquired throughout the entire county the peculiar but significant nickname 'the manure spreader.' When questioned as to the reason for this nickname most any farmer would reply: 'Why that thing is raising the yield of corn all over this country.' Ross kept up the work for

A STUDENT OF SCIENTIFIC AGRICULTURE

About one-tenth of the boys and girls on our farms are now enrolled in boys' and girls' clubs and are learning that agriculture and home economics are sciences worthy of the study of ambitious brains. To supply our need for future farmers, however, we should have five times as many enrolled and learning, like this boy, to raise the best dairy cattle, to produce the best crops, or to keep the best farm homes

two years when the pressure became so strong that his health was again threatened and he was forced to resign."

Here was the prototype of the modern county agent serving the farmer and serving the nation. The Smith-Lever act of 1914, appropriating federal funds (to be matched by state appropriations) for the employment of county agents greatly stimulated this movement. In most states it left an amount to be raised among the farmers of each county to make up the agent's salary, and where the farmers contribute in this way they have usually organized in farm bureaus and are getting the greatest benefit from their county agents. In about 1500 counties there are now farm bureaus; in 600 where there are no such organizations, "county councils of agriculture" advise with the county agents. The agents work under the direction of the extension departments of the state colleges, and the projects undertaken must be approved by the Department of Agriculture. Where there is a local organization paying part of the agent's salary the members appreciate his services more highly and get more out of them. As a public agent, however, he not only serves those farmers who belong to the farm bureaus but all the farmers of the county as well.

There are other benefits of the farm bureau movement as important as the practical aid received from the county agent. In Clay County, Iowa, during the second annual fair held by the local farm bureau, a farmer was seen leaning against a tree dejectedly looking on. When asked what the trouble was, he replied, "I wish my land was over here. It would be worth $30 more an acre to me if it was." "Why, Bill," said the questioner, "your land is just as good as any in this county. It is worth just as much." "I know," replied the farmer "it's just as good land, but over here you people get together and do things. You get acquainted with one another. It would be worth $30 an acre to me to have my farm over here." It is this coöperative spirit fostered by the farm bureau that is helping to make farm life more attractive and is preparing the way for coöperative business enterprises that will place farming on a parity with other industries.

The amount of service that the county agents and the agricultural extension experts

A LESSON IN BEEFSTEAK PRODUCTION

It is oftener easier to teach farm boys scientific methods of selection than their fathers. In many cases the boys then teach their fathers. Sometimes, however, the fathers will not be convinced by repeated demonstrations. Then all the county agent can do is wait until they sell their farms or die and, as one put it, hope that it will not be long

WIVES FOR OUR FUTURE FARMERS

In these faces one can see the "hoarded capital of health" which Emerson perceived as the great asset of our farms. Mixing a practical lesson in bread making with the joys of outdoor life, these farm girls are learning to be happy, healthy homemakers and fit helpmates for our scientific farmers of the future

render to the farmers depends of course upon the ability and personality of those men. Back of each notable accomplishment there is a man. The gain in the yield of potatoes in Pennsylvania, for instance, is largely due to Mr. E. L. Nixon, a specialist in plant diseases under whose direction and inspiration the demonstrations were carried on. He is a quiet, unassuming young man, born and reared on an Ohio farm, who taught school in order to get enough money to carry himself through Ohio State University. He was graduated in 1912, but remained there for three years, teaching, experimenting, and qualifying for his Master's degree, which he received in 1915. During two of those years he was connected with the Ohio agricultural experiment station, making a study of fruit diseases. From there he went to Columbia University for two more years of advanced study. In 1917 he went to the Pennsylvania State College as professor of plant pathology. His specialty was fruit diseases. In Pennsylvania, however, he found that the potato industry was in great need of science to combat the ravages of blight and other ills that potatoes are subject to, and he decided to tackle that job.

Described by one of his associates as full of originality and a first-class salesman and by another as a man who could "sell sand to the Arabs," Nixon started his work among farmers who had had experience with inefficient spraying machines and who believed it did not pay to spray. Nevertheless he persuaded a number to buy high pressure machines and to purchase disease-free seed potatoes in order to eliminate the diseases that spraying would not reach. In all cases actual records were secured by planting check plots which were not sprayed and by comparing local seeds with the disease-free varieties. Then public meetings were held to impress the lessons. The results last year have already been told. The gain effected was worth three-quarters of a million dollars to the potato growers of Pennsylvania. When Mr. Nixon started this work in 1917, Pennsylvania ranked 26th

POTATOES TO BUILD A HOSPITAL

Four years ago Professor E. L. Nixon, specialist in plant disease of the agricultural extension department of the Pennsylvania State College, started to preach the gospel of disease-free potatoes and spraying of the plants and demonstrate to the farmers of the state that it paid. At that time Pennsylvania ranked twenty-sixth among the potato growing states of the Union. Now it ranks fifth. When the Pennsylvania State College announced a campaign to raise $2,000,000 for new buildings, the potato growers of the state made known that they were going to build the $150,000 hospital that was needed. This picture, taken during the commencement activities last June, shows Professor Nixon presenting to President John M. Thomas of the college a crate full of pledges sent by the potato growers for that purpose

among the potato growing states of the Union; its average yield for ten years had been 80 bushels to the acre. In four years, the yield had been raised to 102 bushels and it had advanced to 5th place as a potato growing state. His programme has three years yet to run and he expects the average yield to be brought up to 150 bushels to the acre. If that figure is reached, it will make Pennsylvania the leading potato state in the Union.

An interesting and unexpected outcome of this achievement has been in connection with a campaign of the Pennsylvania State College to raise two million dollars among its alumni and friends for new buildings. Before this campaign was launched a movement started among the potato growers of the state to erect one of the buildings needed. Mr. Nixon was called upon to further this movement. The potato growers would ask him what he thought they should give; he would tell them and they gave it. They decided that they wanted to build the hospital. In a very short time the amount necessary to build it had been pledged and the ground has been broken for this building which will bear the inscription, "Penn State Hospital. Presented by the Potato Industry of Pennsylvania as an Inspiration for its Future and a Tribute to Higher Education." To those who know the story back of this building it will always stand as a fitting monument to E. L. Nixon, typifying in its service to the sick the service that he rendered to the potato growers of Pennsylvania.

Thus the work of these public servants goes on throughout the country. Last year, as a result of it, nearly two and a quarter million farmers were induced to modify their crop or live stock production methods; sixty-three thousand tested 240,000 bushels of seed corn and planted 1,600,000 acres with the selected seed; forty-one thousand treated 2,600,000 bushels of seed wheat for smut and 1,250,000 bushels of oats, and more than three hundred and fifty thousand were influenced by demonstrations to introduce or improve practices in connection with legumes to improve the soil.

One of the most valuable parts of the work is that among boys and girls. Ninety per cent. of our farmers come from the ranks of the sons and daughters of farmers. It is easier to teach them modern practices than their parents, and they have from 40 to 50 years to use them as against about 20 years for the grown farmer who adopts them.

Furthermore, the children teach the parents. In Cumberland County, Pennsylvania, when Mr. Nixon first tried to spread the gospel of disease-free seed potatoes and high pressure spraying he found the older generation of farmers would have none of it. But there were five boys who each secured an acre of ground from their fathers and started in to raise potatoes the "college way." The college specialists secured for them disease-free seed. The boys chipped together and bought a power sprayer. All summer long they took turn about in spraying each other's fields. When harvest time came — their first year — they had beaten their dads to the tune of 71 bushels to the acre. That was enough to establish scientific potato growing in Cumberland County; but it did more than that, for the parents of those boys, next year, turned their entire potato acreage over to them, and they are now becoming our scientific farmers of the future.

A LESSON IN FARM ACCOUNTING

The farmer who knows his costs and can figure his profits has a great advantage over the one who keeps no such accounts. Here is a group of farm community leaders in Montana studying wheat production costs with their county extension agent as instructor. The young farmers naturally take to this instruction better than the older ones

There are now about six hundred thousand boys and girls enrolled in various kinds of clubs throughout the country who are showing their parents some such results as these. Mr. M. S. McDowell, director of agriculture extension service at the Pennsylvania State College, in his last annual report gives this interesting account of two farmers in one community who kept records and brought them in for summarizing:

"One man was thought to be one of the best farmers in the community. The other was sometimes laughed at and thought to be not more than breaking even. The latter had a labor income last year of $2325 and the former an income of minus $85 or, in other words, he lacked that much of paying 5 per cent. interest on his average investment. The one man has been following faithfully the instructions of extension service and observing the results of his accounts. He has sold all cows that do not produce at least 7000 pounds of milk and is keeping all purebred livestock. The other individual has been depending mostly on crops for his income and does not have a cow that produces as much as 7000 pounds of milk.

For any problem that the farmer has there is probably an answer at the county agent's office; if not there, at the extension service department of his state college of agriculture; and if not there, then the United States Department of Agriculture stands ready to serve him. The farmer who is not making use of the vast amount of accumulated knowledge at these sources and of the ability of the agricultural experts who are ready to serve him is wasting an asset as great as his soil fertility and one that is free for the asking.

THE DRIFT OF THE WORLD'S ART TOWARD AMERICA

The Increasing Collections of the World's Masters That are Being Gathered Together by Galleries in America. What Thirty Years Have Done in Bringing to Our Shores Paintings by the World's Greatest Artists

By FRANK JEWETT MATHER, Jr.

OUR art collecting begins to assume a world importance about the year 1893 and the time of the Columbian Exposition. Dr. Bode's reports on our museums and private collections, published a little earlier (1891) in the "Zeitschrift für Bildende Kunst," were about the first notification to Europe that America in the matter of art was becoming her serious rival.

Of course there had been art collecting before there was a United States. But it was small and sporadic. And the great collections which were well formed before 1893—those of Henry Walters at Baltimore, of Mr. and Mrs. H. O. Havemeyer and William H. Vanderbilt at New York, of Quincy H. Shaw at Boston, and Charles L. Freer at Detroit, for example—consisted mostly of modern art. From 1893 the interest turns toward old masters of painting, we are near the beginnings of such extraordinary collections as those of the late P. A. B. Widener and John G. Johnson, and of Mrs. John L. Gardner's preparations for her unique gallery-palace, Fenway Court. The late J. P. Morgan's vast activities as a collector begin as early, but the mass of his acquisitions was made in the present century. Up to 1903 or so the base of American collecting was still rather narrow. The buying was that of a few very wealthy amateurs, half a dozen at most. The last twenty years has seen a great progress. Many new collectors have appeared—such extraordinary collections as the late Benjamin Altman's, Mr. Charles P. Taft's at Cincinnati, Mr. Martin Ryerson's at Chicago, Messrs. Philip Lehman's and Henry Goldman's in New York, with those of Mr. and Mrs. Henry E. Huntington, date from these years.

With this increase in great collecting went an even more salutary growth of small collecting, and, withal, an extension of the range of acquisition. The old master and the Barbizon painting no longer ruled alone. Mr. Freer who began with contemporary American painters and Whistler finally left to the Nation in addition a marvelous collection of Near Eastern and Far Eastern treasures. The second Henry Walters has added to his father's modern paintings and Chinese porcelains, remarkable objects of the classical and mediaeval eras. Mr. J. P. Morgan acquired the most precious illuminated manuscripts, drawings and prints in the thousands, mediaeval ivories and enamels, a whole museum of industrial art from Merovingian times to the French Empire. Happily, through his own generosity and that of his son, the most beautiful and important part of the Morgan collections remains a permanent source of joy to all who will seek it in the Metropolitan Museum. Thus within the ten years between 1893 and 1903 New York became a market for every sort of art. Before 1893 it was just an off chance that any very fine object in the European market would come to America After 1903 the chance was at least even between London, Paris, Berlin, and New York. To-day, due largely to the financial results of the World War, it is only an off chance that any very desirable object of art will be sold elsewhere than to America. Our only active rivals are the Japanese.

So far I have considered only private collecting, for the good reason that by and large it began earlier, was conducted with more vigor, and on the whole more successfully than that of the art museums. But here also there is a remarkable tale of progress to tell. In 1893 an intelligent European visitor would have felt bound to see at most four or five public galleries in the United States. To-day he would need to visit some twenty, and would

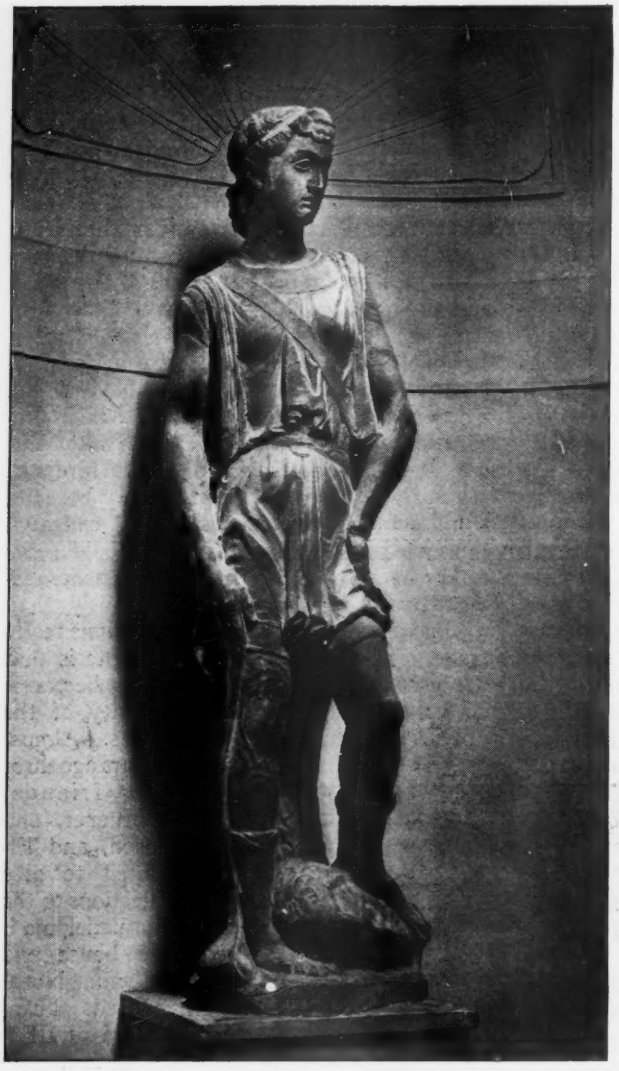
find as many more quite worth his while. Of more modest museums, chiefly devoted to our contemporary art, there are scores widely distributed throughout the country.

The best of these, such as the Metropolitan Museum and the Boston Museum of Fine Arts, owing partly to over complicated organization, dependence on gifts, failure to trust the expert staff, have had a growth as uneven as it is impressively gigantic. The real triumphs in museum making have been Mrs. Gardner's Fenway Court, Mr. Archer Huntington's Hispanic Society, the late Charles L. Freer's Museum at Washington, which is still in process of arrangement in its beautiful building. These are the institutions the like of which Europe can hardly show. In every case we have to do with a dominating personal taste and with either no organization or the very simplest. The progress of all our great and small museums will be hampered and their money largely misspent until the million-dollar trustee and committee man learns enough to let the twenty-five-hundred-dollar curator do the spending and selecting in his own department. Still we may the better bear the backwardness of the museums as compared with the private collectors, when we consider that the greater part of the private collections have been and will be dedicated to the public pleasure.

This kind of magnanimity early showed itself among American amateurs. To the New York Historical Society successively fell within seventy years the Luman Reed, the Abbott Egyptian collection, the Dürr and Bryan collections. Quincy A. Shaw, pioneer American collector of Millet and the Barbizon pictures, left his most important pictures to the Boston Museum. With an even more signal generosity Henry G. Marquand in his lifetime gave to the Metropolitan Museum a gallery including masterpieces of Hals, Rembrandt, Van Dyck, Vermeer. And so it has been down to the Altman bequest. And we may note a gradual education and refining of the character of donors. It was long before Mr. Marquand's example of giving unconditionally was followed. Mr. Charles Yerkes left his pictures and collections to the Metropolitan Museum on terms that were impossible of acceptance. Mr. Altman insisted that his bequest be segregated in perpetuity. The late I. D. Fletcher left his collection unconditionally, so that the sale of the less desirable pieces provided a fund for the continual enrichment of the nucleus of fine pieces actually retained by the Metropolitan Museum. I would gladly dwell on this chapter, and can only say that the great American collector is generous even to a fault. No less than a dozen Hertford Houses are said to be in preparation on the Park East, New York. The late Mr. Frick actually did it with rare success, as will appear when his gallery becomes a museum but the success of his endeavor cannot easily be repeated and should serve rather as a deterrent than as an encouragement to those who more generously than wisely wish to give the public museums ready made. The important thing to note is that the generosity of the American collector is actually outrunning the receptivity of the public and the city governments. Almost twenty years ago three collector friends, Messrs. Widener, John G. Johnson, and Elkins offered to give their collections to the City of Philadelphia if it would house and care for them. Nothing happened. I cannot imagine any European city failing to leap at such a gift—for it would have made the finest picture gallery in America—and I hope very few American cities would have let such an opportunity pass.

EROS WEIGHING OUT LOVE
An Ionian marble relief of the Fifth Century, B. C., now in the Boston Art Museum

It is impossible to express without lengthy lists and tedious comparisons the present richness of America in works of art. But a few special instances may help to visualize the situation. We have the majority of the fine works by the Barbizon painters, most of the Whistlers, Egyptian collections at New York and Boston of equal rank with those of



DAVID
By Donatello, now in the Widener Collection, Philadelphia

Europe, collections in Chinese art from earliest times to the Eighteenth Century richer than any in Europe, classical collections surpassed only by the great European collections, Persian collections of the first importance. And all this is merely the beginning of a process hardly a generation old. So much for generalities. Or we may visualize the situation in chosen details. Rembrandt was one of the most prolific of great masters, his work running to some six hundred paintings not including numerous drawings and prints. In 1893 one Rembrandt painting out of thirty was in America, to-day the ratio would be about one for America for seven for the rest of the world. Or take the very rarest of the Dutch masters, Vermeer of Delft. We know of thirty-seven paintings from his hand. Nothing in all painting could be rarer, unless it were such unattainable masters as Giorgione and Leonardo da Vinci. Well, in 1893 there was one Vermeer in America, the incomparable "Women at a Casement," in the Marquand collection at the Metropolitan Museum. To-day there are ten Vermeers in America, and doubtless the list will increase. Or put it in another way, if all the paintings by old masters now in America were pooled we should have quantitively a gallery as great as the National Gallery, the Louvre and the Rijks Museum combined. Qualitatively this imaginary master gallery would outrank the Rijks, but would fall measurably behind the National Gallery, and far below the Louvre. This comparison may suggest at once our growth and the inalienable richness of Europe in works of art. We shall greatly improve our position without really impairing hers, while if the balance shall ever turn in our favor—and I have the faith to expect it—it will be less through the exertions of our collectors than through the genius of our own artists.

Having given a glimpse of the actual facts of the drift of art to our museums and private galleries, an attempt at explanation seems called for. Plainly the obvious reason is our growth in power and wealth. I chose as the dividing line between the old sporadic and new accelerated collecting the cultural moment of the Chicago World's Fair of 1893; I might perhaps more correctly have chosen the political moment of the Spanish-American War, of 1898, and our emergence as a world power. There is such a thing as an immensely wealthy and powerful nation not wanting art—the Phœnicians apparently were like that, but

there is no such thing as a wealthy and powerful nation wanting art and not getting it. The Romans who were relatively incapable of creating an art of their own, got it from Greece by conquest first, by luring and purchase later. The United States produces her own art more readily than did Rome, but the art that gives her prestige in the world is still that which her dollars have wrenched from Europe and Asia.

The motives for our somewhat ruthless and reckless collecting are various and baffling enough. It depends only in small degree on personal taste, much on desire for prestige, much on the astute salesmanship of middlemen —decorators and architects, and the great art dealers. I have been an observer of this process for more than twenty years, and have come out on the whole less cynically disposed than I went in. As a poor man and an absolutely indigent collector, I was naturally inclined to suspect the worst in this way of snobbery and ignorance in the rich, and especially in the new rich collectors. Ignorance I have met abundantly, ostentatious ignorance or snobbery very seldom. And I have often had the luck to find real amateurism and appreciation where I did not expect them. Generally speaking the new collector knows that he does not know, bestows a touching confidence in his art dealer, and values too lightly the observations of vagrant critics. Generally such collectors want to learn. Being involved in great affairs and with little leisure they learn under difficulties and naturally rarely acquire anything like *expertise*. That, saving a few who seem born to it, is reserved to collectors whose forebears were amateurs. I have frequently noted in American collecting families, the second generation develop a taste and *expertise* which the first inevitably lacked.

The part of the dealer and middleman in art collecting deserves a separate essay. I can devote only a few words to the engaging topic. In our American collecting the dealer has counted tremendously, often too much. Yet on the whole we are in his debt. The late Samuel P. Avery got together the Vanderbilt and the Walters gallery as early as the 'seventies. I suppose the Duveens are chiefly responsible for such extraordinary collections as the Widener and the Frick. It is not an ideal way to collect, but it is about the only way that a wealthy amateur who is poor in leisure can follow. The intimate joys of the quest are not his, nor are the great hazards. Financially he is betting on a sure thing, artistically he is guaranteed against falling below a certain standard. But a dealer-made collection generally lacks that finer and almost mystical coherence which all collections based on fine

BEATRICE OF ARAGON
This marble bust, by Franz Laurana, is in the H. C. Frick gallery

personal taste present. Where you have the fine personal taste with an able dealer to serve it—such a case as the late Henry Clay Frick's—you have perhaps the best conditions for successful collecting that any very busy community can offer. The finest flower of taste grows only in gardens of leisure.

From time to time we read in the headlines, and sometimes in more reputable pages, that the great American collections and museums are full of worthless copies or sheer forgeries. Such is not the case. There are badly revamped pictures about, and many of doubtful attribution, but the great dealers, simply as a counsel of good business, are bound to deliver a money's worth and generally do so. The dealer himself may be deceived; to deceive a rich client would be madness, for such deception is inevitably found out. Indeed the experts who solemnly convert their mere guesses into certificates are more blameworthy than the dealers in putting mediocre works into circulation under great names. In a larger way every considerable American collection of twenty years' standing is to-day worth in open market at least twice what it cost. I have seen vast accumulations of trash and spurious objects in the hands of too hopeful collectors. But this stuff was not bought of great dealers, but picked up in little shops at alleged bargain prices. It is fair to say that in most cases it really was worth what it cost. Evidently the collector who has little taste and knowledge and is unwilling to pay for professional guidance is likely to fare ill. I think the great dealers have on the whole rendered us a great service, for which, to be sure, they have been lavishly paid. If great collectors would depend more on the advice of artists and fellow amateurs, and somewhat less on the dealers, the standard of collecting would be raised. But this implies a freer and more intelligent social circulation than we have as yet attained. I see more of it in the Middle Western cities than in New York, and it would by no means surprise me if the finer amateurism that the future is sure to bring should come from the Middle West eastward.

REMBRANDT'S SON, TITUS
The painting by Rembrandt is in the Altman Collection, at the Metropolitan Museum of Art, New York City

Why the person with a native love of art collects is plain enough. Poor or rich, busy or leisured, he will find his way. Why so many rich Americans

collect largely before they have developed any taste for art at all, is of course due to expert salesmanship. Let us take an imaginary case. Last month Bill Sharp's oozer in Oklahoma became a gusher, and Bill himself is gushing into millionairedom. That fact is duly noted in half a dozen palatial art shops on Fifth Avenue, and by a hundred or so open-eyed allies of these dealers. When Bill hits the trail for the Plaza Hotel, he will find his apartment full of engraved notices of exhibitions. His wife will readily find escorts to these shows, and will receive from the highly trained principals and employees a delicate homage such as Mrs. Bill never knew in her home town. Within the season Mr. Bill may, on a restless stroll before breakfast, drop in and buy the Rembrandt he liked the afternoon before. Mr. Charles M. Schwab once did that shortly after his promotion to the head of the United States Steel Company. He soon learned to appreciate his Rembrandt more deeply, and so doubtless will our imaginary Bill. Even if he doesn't come to care much for his Rembrandt, Bill Sharp, Esq. will be shrewd enough to perceive that he bought with the picture what he most lacked—a certain prestige. Oil millionaires are common as dirt, owners of Rembrandts are still somewhat rare. Soon odd and fastidious creatures—critics and aesthetes often European or even more exotic—will be leaving cards at Mr. Sharp's apartment asking permission to see the Rembrandt. Their company will be both bewildering and grateful to a somewhat lonely Mrs. Bill. Eventually the Sharps will be asked to lend the Rembrandt to a charity loan exhibition, and Mrs. Bill's name will appear as patroness among the proudest. Mr. Bill will continue to collect. He and his wife may or may not have joy in their pictures, but they will bring over from Europe masterpieces America needs, and they will pretty certainly bequeath the Sharp collection either to the home town or the Metropolitan Museum. So the wiles of dealerdom and the indulgence of new-rich vanity will come to serve thousands of modest lovers of beauty.

A LITTLE GIRL
A Velasquez canvas in the Hispanic Museum, New York City

Such is the frontal attack—the quarry run promptly to bay and dispatched. Of course the dealers may fail to get our Mr. Sharp so readily. But get him they will. Suppose he can't be induced to buy old masters, his wife can and will be induced to build a great

A TURKISH PRINCE
This miniature portrait by Gentile Bellin is now the property of Mrs. John L. Gardner of Boston

country house. Her architect will of course provide her with period rooms, Elizabethan, Jacobean, Queen Anne, Georgian—probably all together. He will suggest pictures of the period, at great prices. He will compromise at what are technically called "decorative" pictures at astonishingly moderate prices. This brings Mr. and Mrs. Sharp in contact with the staple of the cheap auction rooms and endows them with the failures of the great dealers. For a few years they may live happily amid the shimmer of brown varnish enclosed in mellow gold. But a day of disillusionment is pretty sure to come. They may see of themselves that their Van Dyck doesn't hold up with the Van Dyck of the Schultzes, whose father struck oil in Pennsylvania. Or the slightly raised eyebrows and shoulders of some visiting expert or intelligent guest before their Sir Joshua Duchess may cause reflection. They are likely to resent a sham when they know it, and the real Van Dycks and Sir Joshuas will gradually replace the imitations. So they pass circuitously into the hands of the great dealers, and when the decorator decrees that the country house is to go into tapestry instead of pictures, a fine collection is as likely to go into a public museum as into the auction room.

I once had a striking example of the way decoration may limit collecting. Learning that the pictures of that admirable collector the late Emerson McMillin were to be sold, I inquired as to the cause. I knew that his fine landscapes of all the modern schools singularly reflected his open-air personality, and I knew he had collected without the slightest idea of financial profit. The explanation was the simplest. He had bought a country house hung with tapestries, and had to choose between the tapestries which evidently "belonged," and his pictures which as plainly didn't.

We have seen the various motives that enter into our collecting. The actual importation of fine works of art is always a benefit whatever the motive for acquisition. Then motives improve. Great works of art have their own persuasiveness, educating by degrees even refractory owners. Often the collection that is gathered more or less perfunctorily as an expression of the vanity of wealth and

power passes into the museum, exercises its silent influence, often becomes the subject of positive intelligent instruction, serves to refine the coming generation irrespective of wealth or social estate. And perhaps an even more valuable service will be that the American artist will soon have, nay now has, before him great examples of his art, so many instigations to creation, so many counsels and encouragements. Meanwhile the museums are making the taste that will create thousands of keen small collectors, real amateurs, and thousands more of art lovers who for one reason or another can love art without coveting its possession.

Finally what does the drift of art towards America mean for the old countries of Europe? We are as active collectors five centuries behind Italy, four behind France, three behind Germany, Spain, and England, but we are catching up with amazing speed. For a generation to come most of the fine objects of art sold from private collections anywhere in the world will undoubtedly drift to America. Certain results will surely follow. Our higher culture will become more like that of Europe, and there will be new bonds with the old countries on the highest plane. That mutual condescension by which we seem crude to them while they seem effete to us will be diminished as we come to agree better in the realm of taste. Then, however much we enrich ourselves at the expense of the European private collector, we shall not really impair the artistic primacy of Europe. The great series of Rubenses, Titians, Van Dycks, Rembrandts, Halses, Velasquezes are safely in the galleries of Europe. The masterpieces of Giotto, Masaccio, Raphael and Michelangelo are happily on their original walls. With the mere surplus of Europe we shall be wealthy. Accordingly the fears expressed in England and the export laws proposed or enforced in France and Italy seem really the expression of unreasonable alarm. If all the private collections of Europe came to us, we should hardly attain an artistic equality — as measured by galleries — with France, Germany, or England. England and France drew upon Italy for two centuries and more without visibly impoverishing her, we shall draw from England for a generation or more, and she will remain immensely rich in art.

Perhaps it is salutary to recall in closing that while to buy old art is good, and while we may heartily exult in the marked drift of old art our way, that country is permanently rich, and in the long run only that country, which best uses the art of the past in order to produce in abundance and beauty the great art of the present.

ST. FRANCIS RECEIVING THE STIGMATA
By John Van Eyck, now in the John G. Johnson collection in Philadelphia

THE FIGHT FOR AMERICAN BIRD PROTECTION

The Difficulties of Preventing the Extermination of Birds Whose Only Fault is Their Beauty. How the National Association of Audubon Societies is Endeavoring to Save the Feathered Denizens of America

By T. GILBERT PEARSON
President of the National Association of Audubon Societies

ONE Sunday morning, some months ago, New York City papers carried flaming advertisements, "Slaughter Sale of Paradise Feathers—$180.00 Hats for $65.00." In the days that followed, the shop windows on Fifth Avenue, Broadway, and many cross streets were filled with the exquisite plumage of the minor bird-of-Paradise. In hotel corridors and cafes, on the sidewalk, and waving in passing limousines, paradise suddenly began to be used on women's hats to an extent hitherto unknown.

The officers of the State Game Commission in the Times Building and those of the Audubon Society, farther uptown, were bombarded with questions: "What does all this display of paradise mean?" "Why don't you enforce the law against the sale of feathers?" "Why do you pretend to protect birds and allow this shameless traffic to continue in flagrant violation of the statutes?" These and numerous similar queries came in over the telephones or by letter.

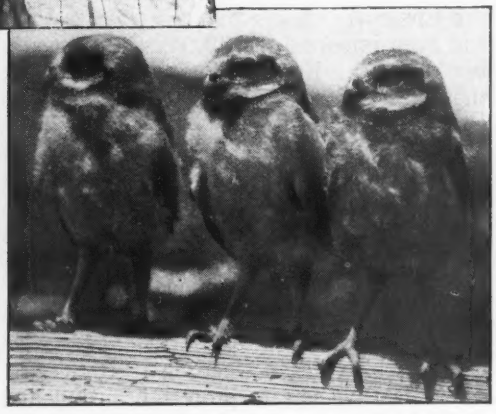
As a matter of fact no law was being violated. The proprietors of the millinery shops, and the women who were wearing the dainty yellow and chestnut plumage were operating strictly within their legal rights. It is true that the Tariff Law of 1913 contained a provision, clear cut and unmistakable in its meaning, that no feathers of wild birds should in future be imported into the United States. There, however, the restrictions ended. The law said nothing about prohibiting the sale or wearing of such feathers once they were here. There is a state law, the passage of which was secured in 1910, that does not allow the sale of the feathers of protected birds, or the feathers of any bird belonging *to the same family* of any protected bird in the state. But there are no wild birds-of-paradise in New York State, nor is there any representative of its family found in the woods or fields of this country. So the answer given in all cases was that people who possessed stocks of these feathers, regardless of how they came into possession of them, could make sales if they wished, and ladies desiring to enhance their beauty by wearing them were likewise at liberty to follow their inclinations.

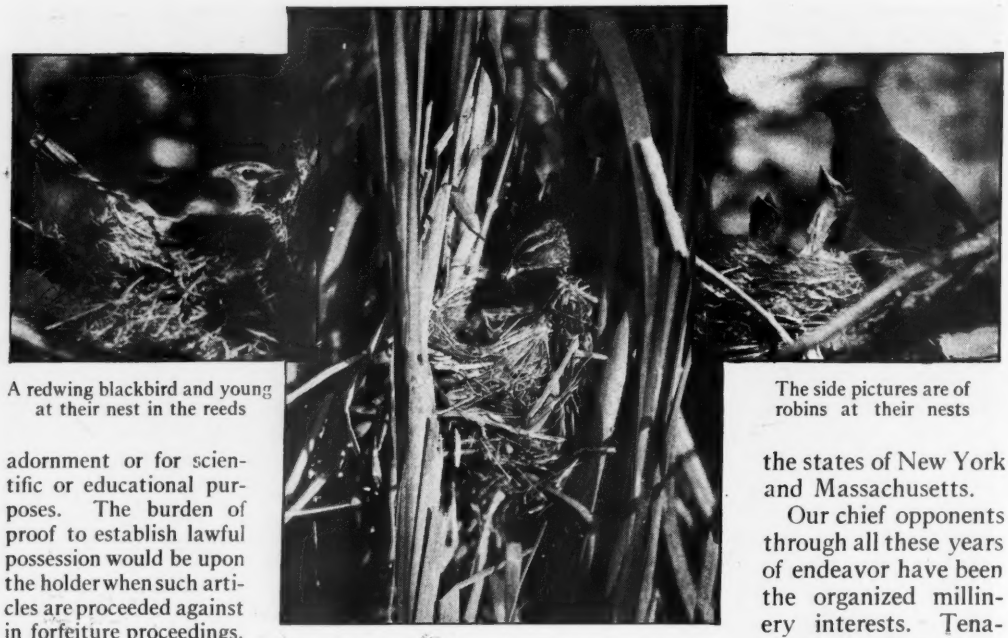
"But why do we see so many and why are they so cheap?" was the next question. The answer to this was even more simple. The Fordney Committee in Washington had just brought before the House of Representatives its new Tariff Bill and this contained a paragraph which read:

> Birds of Paradise, Aigrettes, Egret Plumes and the feathers and parts of Wild Birds, the importation of which is prohibited by the Act of October 3, 1913, would be deemed to have been unlawfully imported after the passage of the above Act wherever found except when in actual use for personal

This fierce bird viewing the world from the entrance to its nest in a giant cactus, and the tiny specimen clinging to the Westerner's finger are the same elf owl

The talkative owl at the left, below, and its listening companion are screech owls which make up in volume of sound what they lack in size. The triplets at the right are burrowing owls





A redwing blackbird and young at their nest in the reeds

The side pictures are of robins at their nests

adornment or for scientific or educational purposes. The burden of proof to establish lawful possession would be upon the holder when such articles are proceeded against in forfeiture proceedings.

This meant, if this bill should be enacted into a law, that one who possesses, for the purpose of sale, any of the plumage referred to above must prove conclusively to representatives of the Government that the identical plumage offered for sale was imported prior to the passage of the Tariff Act of October 3, 1913. Furthermore if such a possessor of plumage fails to prove this, his merchandise will be confiscated.

Of course every millinery shop or department store in the United States that was handling paradise feathers had to proceed quickly to get rid of its stock, for probably not one among them could prove to the satisfaction of the Customs Officials that his feather goods had been imported legally, viz., before October 3, 1913. From a business standpoint they acted wisely. Most correctly did they read the handwriting on the wall, for the Tariff Bill that was for so long in the hands of the Conference Committee of the House and Senate passed carrying the feather proviso with it, and milliners who failed to heed the warning quickly had their stocks of bird feathers seized by the watchful customs officials.

Thus there has been brought to a successful conclusion the long series of legislative battles which began when, in 1886, the first comprehensive law to protect beautiful and useful birds was passed by the legislatures of the states of New York and Massachusetts.

Our chief opponents through all these years of endeavor have been the organized millinery interests. Tenaciously they have clung to the hope that the rising tide of resentment against the traffic in wild birds would not overwhelm them and sweep away their business, which at one time was very large.

In 1910, when the Audubon plumage law was pending in the Legislature of New York, attorneys of the milliners, appearing before the legislative committees having the bill in charge, stated that the feather trade of New York City alone represented a capital of fifteen millions of dollars and if the Legislature enacted the measure under consideration it would throw 12,000 people out of employment. They opposed us strenuously in every fight in the fourteen states where the plumage law was enacted, and they resisted to their utmost the passage of the feather provision in the Tariff Act of 1913. Then a strange thing happened in Washington City on February 11, 1921. The Ways and Means Committee drafting the present Tariff Bill was in session. Among those present was a group of men representing the Millinery Chamber of Commerce of the United States, the largest and most influential group of milliners in this country. They were there for the purpose of supporting a measure which they themselves had been responsible for having introduced. They stated they had fought for years to maintain the right to sell feathers and also to allow their importation

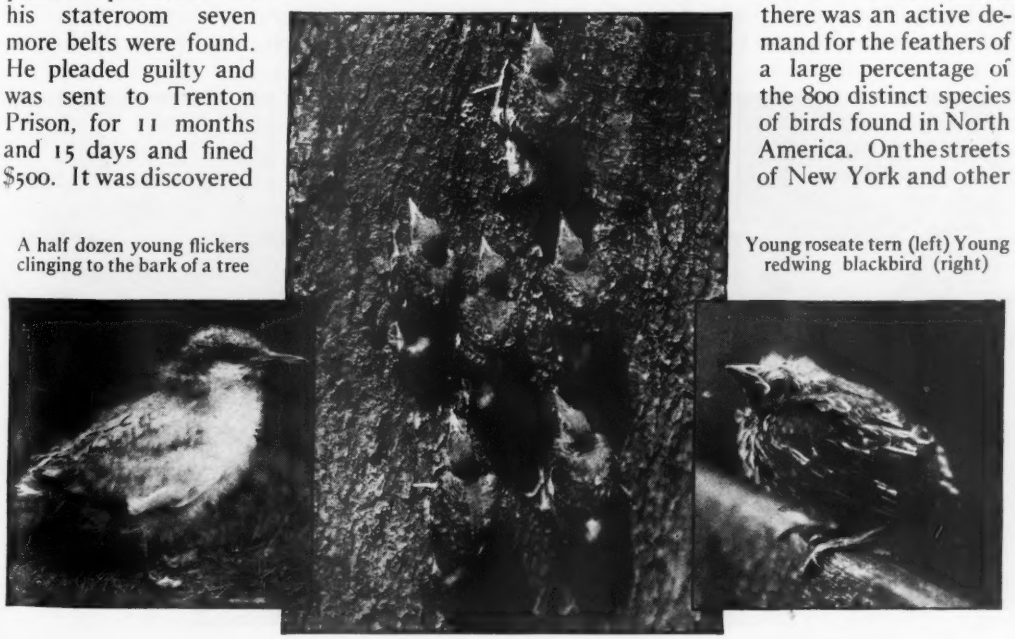
for sale, but since Congress had deemed it wise to prohibit importation they wanted a measure passed which would destroy all incentive for the smuggling of feathers.

The illegal importation of aigrettes, goura, and paradise has been tremendous during the last eight years. Officers in our Navy have done this—and been caught. All kinds of schemes have been devised to circumvent the Government officials. In January, 1916, a trunk was taken off a ship in the Port of New York, sealed and shipped in bond to Mexico City. At Nuevo Laredo it was taken from the train and that night two Mexicans waded back across the Rio Grande with it on their shoulders. The next morning it was checked on a ticket for New York but was promptly seized by two Government officials. It contained 579 complete skins of the minor bird-of-paradise, valued at nearly $10,000.

One of the most important cases of smuggling, where the offenders were apprehended took place this same year. On November 26th the Steamship *Kroonland* arrived at its dock in New York City. Almost immediately Angelo Tartaglino, chief steward of the ship, attempted to leave the dock, but was overhauled and examined by a Customs Inspector, J. C. Rothchild. Upon being searched it was found he was wearing beneath his trousers a sack-like belt that contained 150 bird-of-paradise plumes. In his stateroom seven more belts were found. He pleaded guilty and was sent to Trenton Prison, for 11 months and 15 days and fined $500. It was discovered that the chef at Shanley's was sending him a check for $50 every month while he was in prison. So the chef was arrested on some charge and Tartaglino was brought from prison and questioned. In the end it was found that Tartaglino was an agent for Arthur Arbib of the New York Fashion Feather Company, and this was the second time he had smuggled feathers in for Arbib. He received $200 for his services on each occasion. Arbib then came forward and confessed. His store was raided and smuggled goods to the value of $73,500 was seized. Arbib was fined $4,500 on a charge of conspiracy and $500 for smuggling, but on account of poor health escaped a prison sentence.

Many of these feathers were turned over to the National Association of Audubon Societies by the Government, which organization in turn made educational exhibits of them in more than 60 museums throughout the United States.

The Audubon Society whose activities now cover a wide range of subjects in connection with wild life protection was originally organized as a protest against the traffic in feathers of wild birds. At that time there were no laws to protect non-game birds of the country. Even such birds as thrushes, vireos, warblers, and hummingbirds were at the mercy of anybody who cared to shoot them. Furthermore, there was an active demand for the feathers of a large percentage of the 800 distinct species of birds found in North America. On the streets of New York and other



A half dozen young flickers clinging to the bark of a tree

Young roseate tern (left) Young redwing blackbird (right)

cities one could see many women's hats adorned with the heads and wings of orioles, yellow warblers, waxwings, bobolinks and other birds highly valuable for their insectivorous feeding habits.

Every summer scores of men about our larger lakes and along our coasts, cruised in vessels fitted up for the purpose of collecting wings of gulls, terns, and other seabirds. The island homes of these long-winged fliers of the sea were visited, and the birds shot in immense numbers. Their wings were disposed of in the markets of New York City, then the feather emporium of this country.

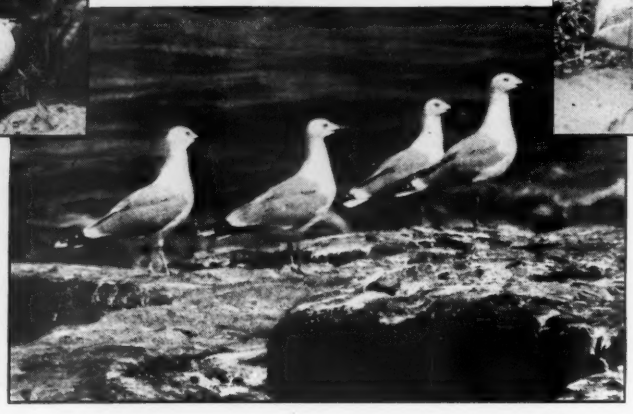
I have examined the diaries and records of some of the men engaged in this business. The extent of the slaughter that went on is almost beyond belief. Not less than 500,000 seabirds were killed on the coasts of the Carolinas alone during a period of seven years. They were always shot when engaged in caring for their young, for then their feathers are best. The young, of course, were left on the beaches to perish from starvation.

Egrets that were known ordinarily to breed as far north as New Jersey were shot at the height of the breeding season for the aigrettes which they bear. When any species of wild life is commercialized, it is only a period of time until it will become exterminated over that section of its range where the persecution continues. As result of this extraordinary traffic which many people have now forgotten, gulls and terns became very scarce along the Atlantic Coast. The Audubon Society not only sought and secured laws to make it illegal to kill this great group of non-game birds, but began the practice of employing guards to watch the colonies to see that the laws were enforced. For many years the Society's hired agents have thus protected in summer practically every known breeding colony of water birds along the Atlantic and Gulf coasts. One result has been that the gulls and terns have increased through the years and now are assuming something like their former abundance. Largely because of these stringent laws and their enforcement the trade in feathers of most birds gradually died out, and for several years there has been no active demand for those of birds found in the United States with the exception of the egret.

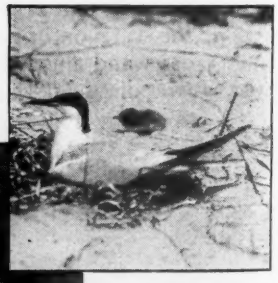
The illegal killing of these birds continues and the contraband trade still exists. To-day the egrets are not known to breed north of North Carolina, and we have only two colonies in that state. There are some in South Carolina, Georgia, Florida, Mississippi, Louisiana, and Texas.

The prices which people are willing to pay for aigrettes has gone up and up, until they have come to be worth twice their weight in gold. The nuptial plumes taken from a single bird engaged in caring for its young will often bring $25. Knowledge of this fact produces a great temptation in the minds of men living in the Southern swamps, whose lives are passed under hard conditions and who rarely see any

A roseate tern on her nest. Notice the short wings and the long white tail, in contrast to the tail and wings of the common tern



Herring gulls on the coast of Maine. Their breeding places are protected by wardens of the Audubon Society



A common tern, with a young bird in the background. Note the long wings and the comparatively short tail

Colonel Roosevelt on a beach strewn with tern eggs (above). At the left is a photograph of an exceptional flock of terns. These birds were being killed off rapidly, but largely through Roosevelt's interest, they have been protected. At the right is a pelican picture taken in the nesting colony at Malheur Lake, Oregon—a United States bird reservation

actual cash. Many attempts have been made to raid guarded rookeries and trouble has frequently resulted. Two of our wardens have been killed, and others have engaged in rifle battles with men who attempted to raid the colonies of birds they guarded.

The demand for aigrettes apparently is as intense to-day as it ever was, and despite all our efforts egrets have not increased as have the gulls and terns. Possibly 20,000 breeding birds still exist in Eastern United States, but it is an open question as to whether the race of these magnificent white birds can be preserved to our country.

But the day has come when the wild birds and game of the United States are guarded by a better system of laws than exist in any country in the world. England, for example, does not possess a game warden system such as is operated by our Federal Government and by nearly every state in the Union. There is not a public warden in France. The gendarmes who are supposed to enforce such bird protective laws as exist have not the power to enter any enclosed private grounds to arrest gunners, and as nearly all the land is enclosed, there is little that these officers could do to protect the birds if they were so minded. I am informed by M. Jean Delacour, President of the French League for the Protection of Birds, that the total number of convictions for the illegal killing of birds in all France in 1921 numbered just sixty. In New York State alone during the same period there were more than 1,000.

Small songbirds are eaten generally in southern Europe, and in most European countries skylarks are legitimate game birds. They are killed and sold by hundreds of thousands in the public markets. In the United States one cannot sell even a native wild duck.

Some Europeans tell us that if they had public sentiment favoring adequate bird protection they would have the necessary laws. In this country owing to persistent organized efforts constantly put forth in behalf of our wild life, legislation has kept a bow-shot ahead of the great mass of public sentiment.

One result of this, however, has been that many of our bird protection laws have been

maintained on the statute books only by the most constant vigilance, and frequently only after strenuous campaigns. Commercial interests have time and again tried to have the laws amended so that game birds could be marketed, or the trade in feathers legalized. Then, too, the most astonishing antagonism every now and then develops against some bird, and legislative action is sought to permit the killing of what had been generally supposed to be a harmless species.

One of the finest singing birds of the Pacific Coast is the Western meadowlark. Its voice is superior even to the pleasant, warbling of our Eastern lark. It is an attractive, friendly, yellow-breasted little fellow that eats insects principally, and sheds its melody to the breeze in the fields and along the highways. It would seem that if any bird had won a place in the hearts of people of the Pacific Coast States it would be this one, and yet a tremendous effort was made in California to remove it from the list of protected species. For three sessions the legislative halls of that state rang with oratory built around denunciations of this little friend in feathers. And why this tempest in a teapot?

It was because some people had become possessed with the idea that the meadowlark was eating up the grape crop. The Audubon Society people worked very hard to defend their law, but, to be fair, sought for all evidence obtainable that would tend to show the meadowlark to be guilty of the crimes laid at his door. All the investigation produced was the finding of two people who were willing to state —yes, even swear—that they had seen meadowlarks sitting on grape arbors singing, hence the conclusion that the birds must eat grapes!

Then there was the outbreak in Arkansas and northeastern Texas against the depredations of wild ducks, which it was claimed poured into the rice fields in autumn and destroyed the crops, hence the unlimited killing of these birds, it was argued, should be permitted. The peaceful and confiding mourning dove came in for a great deal of abuse because of its alleged destruction of wheat in Arizona; and certain people in New Jersey periodically want to wage war on the robin in order to protect their cherry crops. All these attacks on the birdlife must be met, and while the majority of these cases are handled by the Government's Department of Agriculture, the Audubon Society, as the one large membership organization in America devoted to bird protection, is called upon to handle its share.

One of the most astonishing cases with which we have ever had to deal has been in defense of the brown pelican. In the early days of our work we were having trouble to protect a colony of these birds that every breeding season assembled on a little muddy island in Indian River on the Atlantic Coast of Florida. A man was employed to watch the island and see that the recently enacted state bird-protection law was enforced, at least in so far as it applied to the pelican. However, depredations were committed and the local courts showed scant enthusiasm for punishing men who might kill the birds or rob their nests.

At length our troubles were laid before President Roosevelt who was known to be a bird-lover and not without resourcefulness. He at once became interested and after ascertaining that the little key was unsurveyed Government land and worthless for agriculture, and, further, that the Audubon Society would continue to pay for a man to guard it, he proceeded without delay to sign a document that reads as follows:

> It is hereby ordered that Pelican Island in Indian River is reserved and set apart for the use of the Department of Agriculture as a preserve and breeding ground for native birds.

This was on March 14, 1903. Some time later the writer cruised the Florida west coast and reported finding a number of other worthless, Government-owned keys where pelicans and other birds were making their abode. In due time several of these were by the same process made Federal Bird Reservations. Soon others were established off the Louisiana Coast, and guards were duly posted to protect them. Now, we thought, the pelican is safe. His peace and future happiness are assured.

But how little we know of the future! How could we foresee that in 1914 German troops would be marching through Belgium, and that the echo of their foot-falls would soon be resounding among the pelican colonies on the mangrove keys of the Gulf Coast. As the war increased in intensity, the growing scarcity of food caused Mr. Hoover to make various requests of the public regarding its conservation. One of these was that the people eat more fish.

SNOWY EGRETS IN THE COLONY AT ORANGE LAKE, FLORIDA

This colony is owned and protected by the Audubon Society, and in it the egrets, which a few years ago were threatened with extinction, have an opportunity to increase in numbers. The only reason for the killing of these birds was to secure for use on women's hats the beautiful wing feathers

Soon Southern fishmen began to complain that the fish supply was failing and had been for some time. They attributed this not to the criminally wasteful methods that many of them had employed for years, but to the brown pelican. These birds must be killed it was declared, for they are taking the fish in enormous quantities.

The hue and cry increased until early in 1918 a perfect storm of protests swept over some of the Southern states, particularly Florida and Texas. The would-be destroyers of the pelicans found a champion in the person of the State Fish Commissioner of Florida. He marched up and down the state shouting that as result of complaints he had thoroughly investigated the matter and found there were not less than one million pelicans on the Gulf Coast of Florida, and they ate up $900,000 worth of food fish every day. The press of the state generally, sided strongly with him. For example on March 28th and again on March 30th, that year, the Jacksonville *Times-Union* published scathing editorials in which Theodore Roosevelt was denounced for having weakly yielded to the Audubon Society in the matter of establishing reservations for water birds. Vast injury done to the state by egrets was not overlooked and especially were the vials of wrath of this worthy newspaper poured on the homely head of the unsuspecting brown pelican. Somewhat similar reports were coming in from Texas; one official statement being, "It has been reported that the pelicans catch more food fish in a day than the people of Texas get in a year."

Letters of protest came pouring into the offices of the Food Administration. Petitioners and delegations visited Washington possessed with the patriotic idea of killing man's great feathered enemy along the Gulf Coast. "The pelican population on the Gulf Coast amounts to five million." was a favorite statement. They vowed it was an absolute

necessity to destroy these birds at once. "Kill the pelicans or the Kaiser will get you," was their battle cry.

All this was having its effect on the people engaged in the actual fishing. Many began to rise up and as free born Americans assert their rights. Despite the laws pelicans were shot at many places. The night of May 10 some men landed on Pelican Island Reservation and clubbed to death 400 young pelicans in their nests.

It was at this juncture that, at the request of the Federal Food Administration, the writer undertook to investigate the subject. State officials of Texas, Louisiana, and Florida readily agreed to coöperate with this investigation and graciously supplied yachts with crews and provisions for the purpose. In each case a state representative was asked to go along and see that the work was done right. June was the month chosen, for at that season pelicans would be gathered on their breeding islands and one could readily get a good idea of their numbers and spy on their feeding habits. On that great stretch of the Gulf Coast extending from the Mexican border to Florida, the pelicans breed on small, bare, isolated islands where it is possible to count with great accurateness their nests and young. On the Florida Gulf Coast they breed in the low mangrove trees and bushes, but while it requires a little more labor to determine the number of nests, even here it was not impossible to get a fair idea of the population.

I was therefore accompanied by some state officials on every island visited and in every instance we agreed on the number of birds inhabiting it before leaving. At my further suggestion we added 30 per cent. to the number believed to be inhabiting the islands in order to take into account the non-breeding birds such as immature birds of the year before, bachelors, and unmated females of which there are always a considerable percentage. The combined counts and estimates of the entire Gulf Coast of the United States covering about 1,400 miles, were very small compared to the estimate of those who wished to slaughter the birds. It is my belief that in June, 1918, the pelican population of the Gulf Coast did not exceed 65,000 birds.

An even more surprising fact was found regarding their food at this season. When one lands on a nesting island, the young pelicans immediately become alarmed and begin waddling away. Perhaps in order to accelerate their movements, the majority of them will regurgitate fish recently fed to them by their parents and soon whole sections of the islands inhabited by the birds are covered with little piles of fish. Frequently the adult pelicans likewise would present us with their recent meal. These were gathered and sent in tanks of formalin to Washington for examination by the United States Bureau of Fisheries. Dr. Hugh M. Smith Chief of the Government Fish Commission later reported that every specimen sent him that has been taken between the Mexican border and Tampa, Florida, was a gulf menhaden, a fish never used for human consumption. From Tampa Bay southward we collected 3,228 specimens of fish that we saw young and old pelicans disgorge. In these waters menhaden were not so abundant and the pelicans had to turn in part to other fish. Even here only 27 individual fish were found, of species that are sold in markets, and these were all of the cheaper varieties—mullet, pigfish, pinfish, and crevalle. Not one pompano, sea trout, mackerel, or other high priced food fish was discovered to have been killed by the pelicans. It became very clear, therefore, that during the breeding season these birds were exerting no appreciable injury to our national fishing interests.

Upon receiving the report the Federal Food Administration felt at liberty to say that the charge against the brown pelican had not been sustained and so far as the Administration was concerned the case was thrown out of court.

To gain a more widespread and intelligent support of wild life protective measures, to shorten the distance between the lagging public sentiment and our wise and advanced laws is a matter of public education. To accomplish this result is a self-imposed task to which the National Association of Audubon Societies has earnestly turned. By lectures, moving pictures and literature it and its 160 affiliated branches is seeking this end. The possibilities of educating children in the matter of bird protection are not being overlooked, and more than 1,800,000 Junior Audubon Members have been enrolled in our bird-study clubs of recent years. From their ranks will grow the men and women of tomorrow who will continue the fight for the protection of the birds.

THE CORN BELT FROM A CAR WINDOW

Some Notes Jotted Down on a Tour of Observation of Political Conditions in the Middle West. High Taxes and the Distress of Farmers Important Political Elements

By MARK SULLIVAN

THE very first day began with tales of high taxes and hard times on the farms. I rode with Governor Cox and some friends of his, from Columbus about eighty miles to a little city in southeastern Ohio, where he was to deliver his first speech of the campaign. It was a lovely October ride. The road is what was the old national pike, built nearly a century ago for ox-carts and Conestoga wagons, and now turned into a most up-to-date concrete road for the automobile. It was over this old national road, running from Cumberland, Maryland, straight into the heart of the West, that the stream of early settlers of the West, came, except when they came by way of the rivers. Starting at Columbus and riding east, the first fifty miles is as level as a board, the beginning of the great plain from the Alleghanies to the Rockies. Toward the end of the ride, coming from the west as we approached the town where the meeting was to be, we got into the country which is the beginning of the western foothills of the Alleghanies. At first it was merely a faintly observable ripple in the level road, then it became steep ups-and-downs. The place of the meeting, Cambridge, is just where the level farming country meets the hilly coal-mining country. The place names, like Cambridge and New Concord, suggest a New England background.

The occasion was a barbecue. This is probably the northern and eastern limit of the barbecue as a political institution. When we arrived, the feasting was over, and Senator Pomerene was in the midst of his speech, telling the crowd how the new tariff bill would raise the price of nearly everything on their breakfast tables. After Pomerene ended, Cox was brought forward. Cox is unmistakably popular. There was on the part of the crowd an obvious expansion into geniality as he approached. Everybody seemed to know him personally. As Governor of the state, he had had a good deal to do with building the concrete road. Also he used to go quail hunting in the hills near by. To-day, as he came up to the fringe of the crowd, and was piloted through it to the speakers' stand, everybody smiled warmly, and some cried: "You tell 'em, Jimmy!"

Cox told them about the defects of the present Republican state administration in Ohio, about their high taxes, and about the tariff. From talking about the tariff he made an easy transition into the subject of foreign relations, saying that the chief reason for hard times among the farmers is the lack of a foreign market for their surplus. This opened up the whole subject of foreign relations, which is Cox's chief concern, and which he believes will continue to be an issue until it is settled and settled right. To-day he did not go into it in much detail, nor mention the League of Nations by name; but he made a moving appeal on moral and spiritual grounds, for American help in settling the difficult business at Constantinople.

There were perhaps ten or twelve hundred in the crowd—farmers and farmers' wives of American stock, some miners of American stock, and some other miners of Welsh stock. I was introduced to one Welshman with heavy hair, and heavy ink-black moustache, who, although not large in stature, and although sixty-five years of age, was described as being able to get out more coal in a day than any of the others.

Taxation is a very serious matter with Ohio. It is a subject as to which you can be accurate only if you are completely familiar with the facts and figures. If you depend on casual conversations such as compose the bulk of these car-window notes you frequently fail to get the important distinctions between state tax, county tax, school tax, road tax, improvement tax, and the like. One man

will give you a figure which includes the sum of all these. Another will give you the figure for state tax only.

But there is no doubt that the taxation is serious. One speaker at this meeting said the Ohio rate had gone up from about four mills on the dollar to four and a half cents on the dollar. If this statement is accurate—and no one seemed to dispute it—the Ohio taxes must have been multiplied by ten during the last few years. Whether any change has been made in the basis of assessment, I do not know. (This whole matter of taxation: national, state, and local, has come to be serious. It is the burden of talk everywhere, and much of the politics of various communities hangs on it. An accurate inquiry into the total amount of money being taken from the citizen by the tax-gatherer, national, state, and local, throughout the country, should be made.) It has come to a point where the payment of taxes is a real burden. To any one accustomed to the low taxes on farm-land before the war, it is difficult to realize, but it is undoubtedly a fact, that the annual taxes have become so large an item in the budget of the farmer, that it frequently embarrasses him seriously, and sometimes is the cause of the difference between being able to hold on to his land and being compelled to let go of it and return to the ranks of the renters and laborers.

One man gave expression to this in a way that suggests its political implications. "During Wilson's time," he said, "I made enough money to buy my farm; but now, during Harding's time, I am not sure I can hold on to it." In politics, the rule of reasoning is *post hoc propter hoc.*

THE DISTRESS AMONG OHIO FARMERS

IF IT is correct that in Ohio on every thousand dollars worth of property you must pay $41.50 in taxes, this must have a marked effect on investments and the like. Suppose a man has a bond for a thousand dollars, yielding five per cent, or $50 a year. If it is really taxed, and taxed at full value, he must pay $41.50 out of his $50 in taxes. Quite possibly the remaining $8.50 would also be largely consumed by the national income tax. Such a result would cause the investor to have nothing left for himself whatever. Does this sort of thing happen generally? If so, a community where this happens has reached the point where there is no incentive to saving at all, except the hope that conditions will change.

With taxation, with interest payments on mortgages made during the years when the rate of interest was commonly fixed at six or seven per cent.—and coupled with these, low prices for the farmers' products—there can be no doubt that the farmer everywhere in the country is in distress. I heard a man, who was in a position to have knowledge whereof he spoke, say that during the last two years 70 per cent. of the mortgages in Ohio have been foreclosed. In the county seat of Guernsey County, a local lawyer told me that during the period of rising prices—that is to say, during the war—there had never been a foreclosure sale in the county. Now, however, he says, hardly a week passes without a sale "on the courthouse steps," the local term for a sheriff's sale, a sale under foreclosure.

CONDITIONS IN IOWA

THERE is something fundamentally wrong about Iowa, or at least about the parts that I passed through on this trip. The Wabash Railroad from St. Louis to Omaha carries you through the southwestern corner of the state, and the Rock Island, from Omaha to Des Moines, carries you through the middle of the western half. The soil is black and rich, as it is everywhere in Iowa. But why do the farmhouses look so shabby? Why has not Iowa attained those splendid big brick houses that crown the farms, for example, of Lancaster and Chester counties, in eastern Pennsylvania, where the soil is not now so rich, and must have artificial fertilizer, and where, also, the land is hilly and presents more difficulty to the farmer? To be sure, these eastern Pennsylvania farms are two centuries old, while here in western Iowa the Indians still held the land as late as seventy years ago. Nevertheless, on these big Iowa farms, of which the smallest is a quarter-section, or 160 acres, with their rich black soil and the perfectly level fields, one or two good crops at a fair price should be able to provide better farm-buildings than the rather flimsy barns and the small frame houses that are the rule in this section of Iowa. There is surely something wrong in the economic foundation of farming in Iowa. (Jay Darling, of the Des Moines *Register*—whose cartoons, signed

"Ding" are known in every section of the country—says that in some of the other parts of Iowa the era of good farm houses, many of them brick, has been attained. He says the sections of which I am speaking are not the best of the state.)

Nevertheless, I continue to wonder if there is not something wrong. Maybe it is the custom of renting—the quantity of absentee ownership. In Des Moines, young Mr. Wallace, the son of the Secretary of Agriculture, who, during his father's absence at Washington, runs *Wallace's Farmer* told me that 43 per cent. of the farms in Iowa are run by renters. From this, however, you must subtract 15 per cent. in which the renter is a relative of the owner. This 15 per cent. reflect cases where a father rents to a son or a son-in-law. But this leaves 28 per cent. of the farms of Iowa, in which the owner lives in town, and the farm is actually operated by a renter. This condition is never desirable. Absentee ownership is bad for every country and every community where it exists. In Iowa perhaps it is less harmful than in most communities. And yet that it is harmful is obvious.

LAND PRICE FLUCTUATIONS

THE original owner of a farm probably got it for a song a generation or so ago. Some may have got it from the Government at as low as $1.25 an acre. With the passage of 25 or 30 years, such a farmer finds himself, by virtue of the rise in farm land value, in the position of a small capitalist. If he has a half section (320 acres) his farm is worth, at current Iowa quotations, anywhere from forty to sixty thousand dollars. (At the quotations, running as high as $300 an acre, which were the rule during the inflation period, four or five years ago, a 320-acre farm was worth close to $100,000.) Such a farm owner quite naturally thinks of himself as a capitalist. His imagination optimistically leads him to think of the interest on say, $60,000 as $3,000 a year; and that is a good income. Such a farmer, in many cases, has felt that he could move to the near by county seat and live with all the comforts of a town, renting his farm, either for cash, or for a share of the proceeds, and living at ease. Many of these retired Iowa farmers move for the winter to the friendlier climate of southern California. Lafe Young, of the Des Moines *Capital*, once spoke of Los Angeles as "Iowa-by-the-sea."

Many Iowa farmers (and many Iowa business men) who, in the inflation period of a few years ago, thought they had reached the point where they had a competence and could retire, have been seriously jolted during the present year. The renter, at the present price at which farm products sell, was not able to pay the rent. The owner has found a world of trouble on his hands, and in many cases has had to turn to and go to work again.

Of course, farm renting and absentee ownership, in the form in which it exists in Iowa, is much less productive of harm than in the case of other countries where absentee ownership has acquired a bad name. In these Iowa cases the farmer is not an absentee in a very serious sense. Frequently, the town or village in which he lives is only a few miles away, and he is able to keep an eye on things. Sometimes, in the summer, he comes out and helps with the planting or the harvesting.

THE RUN DOWN CONDITION OF IOWA FARMS

BUT even in these relatively less harmful Iowa circumstances, the condition is nevertheless bad. Since the owner does not live on the land, he does not have the pride or the interest which would lead him to build a good home, to plant nice trees, to have a lawn and garden, such as the farm, if it were operated by the owner, could readily maintain. The owner tends to look upon it purely as an investment, and hesitates to spend money on the farm which does not promise immediate material profit. Of course, the renter does not build nor make any improvement looking to future years. The result is frequently rickety barns (although the barn, having a material value in the protection of the crop, is usually the best of the farm buildings.) The farm houses are, many of them, small, unpainted, and otherwise shabby. There is too rarely any attempt at flowers or a lawn. The straggling, sagging, wire fences are the minimum necessary. Along the streams there are areas from twenty to fifty feet broad left to the bushes. The renter, for obvious economic reasons, confines his work to what will yield him money.

When you realize how enormously rich the soil of Iowa is; when you picture the sort of garden Iowa could be, the sort of ideal commonwealth its people could compose, with the economic basis so well assured—when you realize that, you are moved to be a

little sombre at seeing the ill-kept houses of some of the farmers, and the shacks of some of the town laborers. With the economic basis of the soil so rich, maybe there must be something not wholly perfect with the system of exchanging the products of the soil for other things.

Some of this undoubtedly is at the bottom of the present discontent in Iowa. There is no denying that the present prices of potatoes and wheat, and, in a less degree, the prices of oats, corn, and other crops are lower than are necessary to meet the expense of farming and provide a reasonable profit. And yet, on the other hand, an Iowa farmer who has owned his land outright, who had no mortgage, who received the big prices which every farmer did receive during the war years, and who put his profits in the bank and did not yield to the temptation to buy more land at the price that then ruled—any such farmer ought to be able to come through the last two years of low prices for his products without distress. Unhappily, the Iowa farmer, having the same average human nature as the rest of the world, did not in all cases act thus prudently. Some of them put the money they received three or four years ago into "blue sky" investments—oil companies and the like. Iowa, during the boom prices of four or five years ago, was the happy-hunting-ground of the salesmen of get-rich-quick securities. It would be difficult to estimate the amount of money the Iowa farmers parted with in this way. I have heard it estimated in terms of hundreds of millions of dollars.

DISASTROUS SPECULATION

SOME other farmers yielded to the temptation to buy more land. They put themselves into the position of land speculators. Inasmuch as the prices they paid were high, and as they often made only a partial payment on account, they are now distressed to meet the installments of the purchase price coming due, the interest, and the taxes. There was a good deal of this sort of thing. In the summer of 1919, near Allerton in the southern part of the state, a farmer with 320 acres of land was offered $250 an acre for it. As he had bought the farm 25 or 30 years ago for a mere song, this offer had the effect of a sudden fortune. He was contented with his farm and happy on it. So was his wife. They would not be at ease in the town. Nevertheless, the figures were so tempting that the farmer concluded to sell. Having made his bargain, he began to look around for another farm he could buy, only to find that every other piece of farm land had gone through the same price evolution as his own, and that in the end he would be no better off. He was a happy man when he discovered that because his wife had not yet signed the deed he would be able to get out of the contract. Many other farmers, to their present regret, went ahead with the sale. In Des Moines they say that probably about ten per cent. of the farm land of Iowa changed hands at these high valuations of the war-time period, and it is the distress of the buyers that now compose a considerable portion of the discontent which Iowa is trying to express politically. Farm land prices have dropped from $350 or even $400 an acre, down to close to $150. During late October a farm not far from Des Moines was sold for $212 an acre, and this price was so novel, for present conditions, that the papers had a good deal to say about it, and spoke in cheerful headlines of "Iowa Farm-Land Coming Back."

Many of the sellers of such land, who took purchase money mortgages for a large portion of the selling price, are equally embarrassed with the buyers. They realize that the buyer is unable to pay further installments and in many cases cannot even meet his interest. But the holder of the mortgage cannot foreclose. If he should, the present price would not meet the amount of his mortgage. A year or so ago, many a bank in Iowa was able to avoid outright insolvency only by refraining from pressing its debtors to the wall, and by tiding things along until better times.

LOW PRICES FOR WHAT FARMERS SELL; HIGH PRICES FOR WHAT THEY BUY

THE farmer has succinct and forceful ways of expressing what appear to him to be economic truths. For that matter, to him they *are* economic truths, however the editors and politicians and economists may see qualifications to them, or realize reasons beyond the farmers' information. In a dozen different parts of the corn belt, one heard the same phrase from the farmer's lips, when asked about his troubles: "Low prices for what we sell; high prices for what we buy." In actual figures—not merely in terms relative to other commodities—the prices of many farm pro-

ducts are below what they were before the war in 1914. Fifty cents a bushel for potatoes does not pay the farmer to dig them from the ground. (In some of the splendid potato land in the irrigated counties of western Nebraska, hundreds of thousands of bushels of potatoes are rotting in the ground.) Eighty-five or ninety cents a bushel for wheat is barely equal to the pre-war average. Oats are eighty per cent. of the pre-war normal price; corn is ninety per cent. At the same time, the farmer, who is a great reader of newspapers, and has long evenings for reflection, knows that everybody else is getting from one-and-a-half to three times his pre-war returns. The conductors, brakemen, and other railroad workers who fly by on the trains, are getting 188 per cent. of their pre-war wages, and are clamoring for more. The coal miners have succeeded by their solidarity and leadership, in keeping their wages at three times the pre-war level. The newspaper-reading farmer knows all this. He knows it also by experience, whenever he makes a trip to town and becomes a buyer. He sees himself paying two and a half times as much for coal as he paid ten years ago.

THE FARMER SUSPICIOUS OF THE BUSINESS MAN

ONE farmer said: "I always used to notice that the price of a pair of overalls was about the same as the price of a bushel of wheat. For one bushel of wheat I could buy one pair of overalls. This year, however, I must give two bushels of wheat for one pair of overalls." The farmer reads about this in the newspapers and in the farm papers (there are two with large circulations published in Des Moines, and one of them preaches pretty radical doctrine). It is little wonder that the farmer, observing what the coal mine and the railroad workers are able to do by organization, determines to see if he, too, can't accomplish something for himself through organization and political action. Hence Brookhart, and Frazier, and Shipstead—hence the whole radical movement in Minnesota, North Dakota, Nebraska, and some other Northwestern states. In Minnesota and North Dakota, particularly, the words "Democratic" and "Republican" have ceased to have much meaning. The politics of those states, and to some extent, of the neighboring states, is essentially a case of radical *vs.* conservative. And the radical party grows steadily in power, in spite of occasional set-backs.

It is the man on the farm against the man in the town. It is the farmer against the business man and banker. (The laboring man in the town sides with the farmer.) The farmer has come to be suspicious even of his local grocer and dry goods merchant. The farmer thinks that these, and everybody else who is in the business of selling things to the farmer, has some kind of subtle advantage over him, some kind of invisible government in which the farmer is exploited by virtue of some sort of economic freemasonry, some kind of understanding among all the others. When Brookhart, running on a radical platform, got the Republican nomination for senator from Iowa, and when the campaign came on, it was said that nine-tenths of the local Republican papers in the towns and county-seats were not giving their support to the party nominee. They were either frankly opposed to Brookhart, or they were silent, or their support was sullen and perfunctory. But this did not hurt Brookhart with the farmers. Rather, it helped him. The farmer was led to wonder whether, after all, his newspaper really works for him, or works for the town banker, and the town merchant, and the distant corporations who compose the newspapers' advertisers. All this sort of thing is building a most unneighborly feeling, a seriously unhappy feud between the farmer and the town business man.

AN ILLUSTRATION OF THE FARMER'S ATTITUDE

THE case of the Democratic candidate against Brookhart is in point. Clyde L. Herring was born on a farm in Michigan. As a boy he saw an advertisement in a Detroit paper of "boy wanted in a jewelry shop." Young Herring got the job by being first on the ground after an eighty-mile ride on his bicycle. Through hard work he broke down his health, gave up his job, and went to live on a farm in Cass County, Iowa.

At this period Herring was one with the farmers. He was as poor as any of them and he shared their conditions in every way. One day Herring started to buy a Ford automobile from the local dealer. The dealer, who had also the agency for a higher-priced car, tried to sell Herring one of the latter. Herring was penetrating enough to see that Ford cars would sell better if the agent for

that car had no other line, and no superior interest in selling a higher-priced car. He was alert enough to see that the situation presented a business opportunity. He wrote to Ford, and got the Ford local agency. Being energetic, and the times being right, he sold a lot of Fords and ultimately got the Ford agency for the whole state. In this capacity, Herring made a million dollars or more, and became a candidate against Brookhart.

Now it would be interesting to know the reflections of the average farmer on this case. At one time, Herring was his neighbor, equal to him in adversity and handicaps and sharing his conditions and interests wholly. But a few years later, by virtue of energy and the quality called "business ability," Herring was rich. His wealth was acquired in the sight of the farmer. There was no chicanery about it, no suspicion was involved of Herring being the beneficiary of some sort of invisible fraternity of extorters of the farmer. Moreover, the thing that Herring sold was one commodity which the farmer universally regards as good, and not too high in price.

But when this man submitted himself to the farmers as a candidate for the Senate, when he offered to assume the work of political leadership for Iowa, did the farmers take him? They did not. They looked upon him, not as one of themselves, not as merely an exceptional farmer who had gone up in the world. They looked upon him only as a rich man. As one farmer expressed it, "Herring came back here wearing better clothes than any of us and telling us that he employs four hundred men and doesn't pay any of them less than a hundred dollars a month. We took a look at him, and considered the matter, and figured that if he got to the Senate, he'd stand with his kind—he'd stand with the rich. We wanted one of our kind, and we voted for Brookhart."

Brookhart played up to this prejudice. In his Labor Day speech at Des Moines, he said: "I belong to the farmer class. I have never risen above it. I have no ambition to rise above it. I have a feeling of the deepest class consciousness."

HENRY FORD AS THE FARMER SEES HIM

SPEAKING of Ford cars, it is a fact with obvious political significance, that toward Henry Ford personally, the farmer has a feeling of kinship. It is, in fact, a feeling of slowly kindling enthusiasm which may, by 1924, blaze into some sort of political result. I was in Iowa the day Ford cut fifty dollars from the already low price of his cars. To the farmer this was a vivid thing. In a period when everything else he buys was going up in price, this one machine which the farmer already felt was well worth the money relative to other things was sharply lowered. What data has the farmer about Ford? The farmer sees him as a man who is able to make and sell automobiles very much lower than anybody else. He also sees Ford as a man who, according to all trustworthy accounts, pays higher wages to his workers than any other automobile manufacturer. The farmer also knows that Ford bought a rundown railroad, put it on its feet, raised the wages of the engineers, and tried to reduce his freight rate on coal, but was forbidden by the Interstate Commerce Commission, on the theory that for this one road to reduce the rate would dislocate things on the other roads. This coal-freight incident has been much discussed by some of the political spell-binders, and the farmers know all about it. Also the farmer has heard that Henry Ford is trying to get Muscle Shoals in order to make fertilizer cheaper than anybody else, and that the politicians, or "the interests" are trying to head Ford off. Finally, the farmer has heard that Ford has some scheme for a cheaper currency based on something else than gold—a device which is universally appealing to the farmer in distress. Does this picture look good to the farmer? It certainly does, and if Ford chooses to capitalize it he can make a world of noise in the political year of 1924.

HARD TIMES IN NEBRASKA

IN NEBRASKA even more than in Iowa politics is again largely a case of high taxes and distress on the farm. The cost of state government in Nebraska, as in most other states, has become excessive. A former state official told me that one branch of the state government of Nebraska, the attorney general's office, which, ten years ago, was run at a cost of $28,000 for a two-year term, now costs something like $140,000 for the equivalent period. The total appropriations made out of public money by the legislature of Nebraska have gone up from about nine million dollars for the biennium four years ago

to about thirty million dollars for the two-year period now.

In the campaign in Nebraska, hard times were frankly accepted, and were exploited in one way or another by some of the candidates. The Omaha *World-Herald*, Senator Gilbert M. Hitchcock's paper, reporting a meeting at Ong, a town of 300, alluded to the fact that in spite of bad weather, a crowd of 200 was present, and that most of the merchants closed up shop long enough to hear the speech. The *World-Herald* reporter quoted one man in the audience as saying: "We are pretty nearly busted financially, and we have got to be interested." The same paper recited that while Senator Hitchcock was passing some farms where the women were helping the men gather the corn, the question was asked why the women should have to work in the fields, and the reply was: "So we can keep up with the tax assessor."

These heavy taxes come down on the farmer at a time when his circumstances are already made difficult by low prices for his crop; in turn, the towns which live entirely on the farmers' capacity to buy, and to pay his debts, are in an unhappy condition. I should hesitate to repeat, without opportunity for verification, some of the things I was told about local business conditions.

William Jennings Bryan and his brother, Charles W., own several farms not far from Lincoln, Nebraska. One of them is a quarter-section (160 acres).

The official figures of the taxation on this quarter-section, as quoted by Mr. Bryan in his own words, are these:

1915	$93.12
1916	136.82
1917	128.63
1918	127.52
1919	223.11
1920	325.63
1921	494.33

This latter figure, $494.33, is at the rate of a little over $3.00 an acre. If this land of Mr. Bryan's is ordinary farm land, it cannot possibly endure any such taxation as $3 an acre. At the present prices of farm products, no farmer can pay that much in taxation for each acre that he works, and have enough left for his labor, the cost of his seed, fertilizer and implements, and the up-keep of his place generally. Of course, the circumstances in this case may be exceptional. The present article being composed of hasty, car-window notes of a trip through the West, excludes opportunity for investigation. It may be that one cause of high taxes in this case is the high cost of the local schools. In some parts of Nebraska the farming communities have, during the prosperous years of the past, provided themselves with schools de luxe. They have splendid buildings, they provide automobile busses to bring the children to school, and the schools are well supplied with good teachers, including music instructors.

But whatever special conditions there may be in this case, the figures of the increase from $93.12 in 1915, to $494.33 in 1921, tell their own story. This sort of increase has gone on all through this Western country. A trustworthy informant told me that in some counties in Montana the schools will not open this year, or will be opened for only a brief period, because the taxes cannot be raised to pay the normal cost of running them. These incidents would seem to prove that we are just on the edge of beginning to pay the cost of the war, and pay it in the shape of a lowered standard of living—not only a lowered standard of material comfort, but a lowered standard of so important an element in civilization as public education is. If this Montana story is true, and if, in one degree or another, it is typical, we are about to experience one of the most tragic of the unescapable consequences of war.

SLAVERY AND STEEL—A DAY DREAM?

By PHILIP CABOT

NINETY years ago a great portent became visible, or rather audible, in the Western world. "The Voice of one crying in the wilderness," or, as his contemporaries phrased it, squawking. The event proved otherwise. William Lloyd Garrison single-handed had proclaimed war against the institution of negro slavery and declared that he proposed to abolish it. As Mr. Chapman has pointed out in his Life of Garrison, all great periods of history are illuminated by the light of great spiritual bonfires in the glare of which we see the figures of the time stalking in bold relief. And so to-day we see Garrison for what he was, the greatest figure of his generation and one of the greatest of all time.

The movement which in 1829 was as a little "cloud no bigger than a man's hand" grew and thundered; the conflagration rose and spread until it enveloped the whole nation in a consuming spiritual fire which culminated thirty years later in the bloodiest war of history up to that date and by which the institution of human slavery was forever abolished in the United States.

But stop! Was it? Human slavery in various forms has existed since history began. All previous civilizations have recognized it. Are we to be immune? So we have believed, and for a short time, so it has seemed. But look about you! In a late number of a great quarterly journal* a brilliant article has just appeared stating what many others have half seen, that this nation is now subject to a form of slavery more subtle but more complete than has ever before been known. It is this: that we are not to-day the slaves of men, but slaves of machinery, bound in involuntary servitude to the material devices which we have ourselves produced.

The idea may seem to you fantastic or absurd, but in view of the cry of the working millions that they are nothing but wage slaves and of the rumblings and threats of an industrial revolution the thing must be examined. It is now a working hypothesis thrown out into the arena for discussion, and it should be tested like any other scientific hypothesis on every possible concrete case to see whether it will fit or fail to fit.

The railroad industry being excluded as an example because the controlling hand of the Government has given it an awkward twist, we come upon the iron and steel industry as a serviceable unit. One of the greatest, best organized and profitable in the world, it lies at the foundation of our industrial life and has been an object of national pride. We have been brought up to think of it as led by our greatest industrial minds, our greatest "Captains of Industry"; as a prodigy of intelligence in mechanical organization and of energy in productive power. And doubtless this is true. The industry grew by leaps and bounds into one of incredible proportions and power.

Now apply to it your working hypothesis: namely that to-day the machines have become the masters and the men their slaves. If the men are now masters they will behave as masters do, that is, make the slave work while the boss looks on and smokes. The men will enjoy an easy, carefree life of luxury and repose based upon the unremitting labor of the slave.

Now, as the Irishman said, "You'd be looking at that business a lang toime, before you'd see that pitcher." For thirty years, or ever since machinery became highly developed, the history of steel has been one of warfare and bloodshed. Ever since the great Homestead Strike, out of which Frick, Carnegie's second in command, barely escaped with his life, steel has been made of blood and iron in an almost literal sense. Twelve hour shifts worked seven days in the week were until recently the rule, and to-day while the seven

*The *Yale Review*, Oct., 1922.

day week has been largely abandoned, the twelve hour shift, or "the long turn" still remains. But this is not the only industry in which strikes have been frequent and rioting common. All of our great enterprises and most of our small ones have had these human troubles, but the important thing to note is this, steel is the best organized mechanically. The so-called genius of the Yankee has here carried machinery to its highest point of perfection and steel is to-day the only great industry in which the men have always lost the battle and the machines won it.

It may be alleged that the trouble in the steel business has been with the "men at the top"; that the men who made the business were men of blood and iron themselves. But this explanation does not explain. Carnegie and Frick may have been hard men, but they were displaced twenty years ago, and the greatest unit—the acknowledged leader, the Steel Corporation—has since then been managed by Judge Gary. He is not a man of blood and iron. Tact and smoothness, conciliation and compromise are his watch words, and yet the war goes on. It looks a little as if he couldn't stop it; as if he were controlled by some superior force. Is it the machines? Men whisper that he would like to surrender, but that his plant managers won't let him. This seems unlikely, but even if true, it only confirms the hypothesis. These men are closer to the machines than he and more subject to their dominion.

And this fact makes the case even stronger. Ten years ago, on the motion of a microscopic stockholder, a Committee of Directors of the Steel Corporation was appointed and bidden to investigate the seven day week and the twelve hour day and to report forthwith. That Committee was composed of the most humane and powerful men in the Company and it reported in due course that these things were not in accord with human welfare, and that they ought to stop. But they haven't. Before and since that time the condition has been investigated and reported on again and again, and always with the same conclusion. It is contrary to human nature, the human element in the industry, comprised of millions of men, suffers from it, but the machines want it and it goes on. The situation is pitiful indeed. These poor men, from Judge Gary down, are under the illusion that they are fighting each other when in fact they are fighting the Frankenstein of their own invention. Truly the ingenuity of this machine is marvelous or devilish.

SPARK AND FIRE

A FLINT and steel are for the purpose of striking a spark and not of making a fire. For that, fuel and favorable conditions are needed, and so perhaps this flint has done its work for us now upon our steel by illuminating, for an instant, the darkness in which we grope. Let us abandon it to fate.

And we do this the more willingly because another light is visible in another quarter of the heavens, and of a character which may prove very serviceable withal. For it shows signs of being not as so many have proved to be, a mere lightning flash—(or skyrocket as it were)—blinding us for an instant and leaving things thereafter darker than before, but a steady and serviceable, if somewhat dim illuminant, more of the tallow candle order, which might start a conflagration in which things would be consumed including even our terrible Frankenstein.

Compared with the "bold barons of the steel industry" the fraternity of the engineers is admittedly a servile body. Men refer to them as the "slaves of the lamp" burning the midnight oil, or as "men chained to their formulas" from whom little in the way of free, dominant action is to be looked for. Individual genius may occasionally flare out, break its chains and fly heavenward, illuminating the sky, but as a class and especially when grouped in their societies or guilds these men are conservative and submissive to a fault and perhaps the last we should look to for leaders in a revolt.

Within a short time the societies of these men were federated or articulated by a master hand into the Federated American Engineering Societies and in this capacity they were induced by interested persons to institute an investigation or study of the working conditions in the steel industry, particularly with regard to the twelve hour day. In furtherance whereof they appointed a select committee to supervise the work, which in turn employed two persons expert in the business to study it and make report. In due course, the reports having been received and digested, they were ratified and approved by the Federated Societies in solemn conclave and the results ordered published to the world.

All of which was done within the space of one year's time! These results, when one comes to examine them, are of a truly remarkable, perhaps even epoch making character, for they discover, describe, and recommend a remedy, or real exit from the difficulty. Admitting apparently the truth which we have feared, namely that the machines and not the men were the real masters in the industry, they have developed a plan which will please the masters by showing that, in very fact, so far as all human experience can prove, a system of three shifts of eight hours each, or something of the sort, in place of two shifts of twelve hours each will be easier and more profitable for the machines; to wit, will work in the end with more efficiency which is the only God which the machines worship.

Such being the case and the machines not being cruel by nature but only from necessity, the fact that the human servant or slave will be more contented and work better should be pleasing to the master who should find the change suggested wholly to his liking. A most ingenious remedy, this of the "slaves of the lamp" by which all parties should profit and be happier and coming from a most unexpected quarter! For are not these the last men to win concessions from the master where the "bold steel barons" have failed? Perhaps it is because they are more accustomed to their servitude that they accommodate themselves to it better, but there may be another cause.

MASTER AND SERVICE

ALL men have always been and always will be slaves or servants to some superior power. There is nothing degrading in service provided it be to a high master or aim. The negro who served the white man, the steel worker who serves his Frankenstein suffer not because they serve, but because they serve the wrong master. The engineers who now come to our rescue with this makeshift or change shift device are the servants or slaves not of a white man or a Frankenstein, but of a more spiritual thing: an idea or an ideal. The proposal which they make to Frankenstein is not a revolutionary one to be sure, but quite the contrary; a thing wholly in accord with his known proclivites, and sugar coated to his taste. But should he accept it (as one assumes he will) it may prove the beginning of something quite momentous. For we may whisper in the secrecy of the slave quarters, that anything which educates the slave or gives him more time to think is dangerous to the position of the master. No man knows to what such thinkings may lead.

"He that hath ears to hear, let him hear and he that hath eyes to see let him see." Let him really look about him and listen and other signs of movement may attract his notice. Our engineers, one fancies, serve a master of a higher order than Frankenstein, but their numbers are small and their powers feeble compared with his. But of the working human units of this nation, two-thirds, we understand, work upon the soil and much as they complain of hard usage one does well to note that Nature is their master, and that Nature is the handiwork of God. These men then serve a master who is surely higher than Frankenstein, or even the ideal of the engineer, their number is millions and to the seeing eye signs are not wanting that help from this quarter is at hand.

It is then no wild prophecy to suggest that the lonely voice of the engineer crying in the wilderness, the dim flame of the tallow candle which these Federated American Engineering Societies have lit, "the little cloud on the horizon, no bigger than a man's hand" which this revolt of the steel workers has produced, may wax and grow, gathering power as it goes, until it becomes a raging tempest and conflagration before which Frankenstein himself may go down and be consumed and from which the soul of his slave may rise to serve a higher master, even the Overlord or Master of all masters whose service is perfect freedom and peace.

This would indeed be the millennium and is not to be looked for in this our day, but that the years immediately before us have in the belly of them momentous things and that they will be lit by the flame of great spiritual bonfires is not merely probable but certain. The years from 1830 to 1860 witnessed the battle of stupendous forces contending for the spiritual life of our people, and we stand to-day upon the threshold of a time when we shall be called on to be actors or bystanders in a similar undertaking. And so, men of America, make your choice, enlist in one camp or the other, for as surely as there is a Heaven above us, you will be required some day to stand up and be counted.